

**1/1. Examinable syllabus guide for**  
**DECEMBER 2024 TO JUNE 2025 according to ACCA**

**Accounting for Government Grants and Disclosure of Government Assistance**

- Apply the provisions of accounting standards relating to government grants and government assistance in relation to property, plant and equipment.

After studying our material and solving related questions, please refer back to the points above to  
make sure you fully cover it well

## 1/2. Overview

1. **Government grants (G.G')** and other types of **government assistance** are usually intended to **encourage** entities to embark on activities that they **would not** have otherwise undertaken. It can be viewed as an extension to fiscal policies.

### 2. **Scope of IAS # 20:**

A. IAS # 20 sets out the **accounting treatment and disclosure** of 'G.G' and only disclosure requirements of '**Government assistance**' because G.G is a **government assistance** with **reasonably estimated value**. Thus; the distinction between G.G' and other forms of **government assistance** is important.

B. The goal of IAS # 20 is to achieve **proper matching** between G.G received/receivable and the related costs.

Under IAS # 20 **Government** is defined **broadly** to include the government of a country and governmental agencies and similar bodies *whether* local, national or international.

### 3. **Scoped out of IAS # 20:**

IAS # 20 **excludes** the following:

A. **Accounting for G.G'** in the F/S' reflecting the effects of **changing prices**. (Covered under IAS # 29'Financial Reporting in Hyperinflationary Economies');

B. **Government assistance** provided in the form of **tax benefits and tax breaks such as** income tax holidays, investment tax credits, accelerated depreciation allowances and reduced income tax rates. (Covered under IAS #12'Income Taxes');

C. **Government participation in the ownership of the entity**; because participation in ownership is made in **anticipation of a return on investment (ROI)** while **government assistance** is provided with a different economic objective *such as* reducing unemployment in some disadvantaged geographical areas. Also G.G' under IAS # 20 **excludes** transactions with governments that **can't** be distinguished from the **normal trading transactions** of the entity *such as* **government procurement policy** that *results in* increased sales of the entity.

4. G.G' covered by IAS # 41'Agrecluture'.

## 2/1. What is the G.G?

1. G.G<sup>5</sup>; are **transfers of resources** (**monetary /non-monetary**) to an entity in return for past or future compliance with certain conditions relating to its **operating activities**.

2. Examples of G.G<sup>5</sup>:

A. Grants provided for remediating a polluted plant site;

B. Grants provided to encourage or support business activities in **certain regions** such as an economically less developed area *or* industry sectors such as an agriculture-based industry due to its low profitability that may not otherwise be attractive to entrepreneurs.

3. Types of G.G<sup>5</sup>:

A. **Forgivable loans**;

B. Below-market interest governmental **loans**;

C. Grants *related to income*;

D. Grants *related to assets*;

4. **Recognition approach** of G.G<sup>5</sup>

IAS # 20 supports **income approach** rather than the **capital approach** in which the grant is directly credited to **equity**.

5. **Recognition criteria** of G.G<sup>5</sup>:

G.G<sup>5</sup> (**monetary/non-monetary** grants) shall be **recognised** in P/L at F.V **when** there is **reasonable assurance** that:

A. The entity will comply with the conditions attaching to the **grant**; *and*

B. The **grant** will be actually received.

Notes:

A. '**Reasonable assurance**' means existence of a 'Sufficient degree of certainty'.

B. **Recognition** of G.G<sup>5</sup> in P/L *when* received (cash basis) is acceptable **only if** no future conditions would be required from the entity to comply with. *Otherwise* the conditions attaching to the grant **must** be complied with by the entity in order to **recognise** the grant received *or* receivable in P/L. *Thus*; G.G is **recognised** under **deferred income recognition approach**.

C. A grant is **accounted for** under **deferred income recognition approach** in the same manner *whether* it is received in cash *or* as a reduction of a liability to the government *or* in **non-monetary** form.

Dr: Cash/ loan payable/ PPE \$XX

Cr: **Deferred income-G.G** \$XX

D. Any contingent liability *related to* the **recognised** grant should be disclosed in accordance with IAS # 37 'Provisions, Contingent Liabilities *and* Contingent Assets'.

D. Any contingent liability *related to the recognised grant* should be **disclosed** in accordance with IAS # 37 'Provisions, Contingent Liabilities and Contingent Assets'.

*Thus:* Under **deferred income recognition approach**, G.G's are initially **presented** as **deferred income** (current /non-current **liability**) in the SFP *when received and recognised* as **other income-G.G** in P/L on a systematic and rational basis over the periods necessary to match them with the related costs.

**Illustrative example:** Adam received a G.G representing 50% of the cost of a depreciating asset which costs \$60,000. Assume the useful life of the asset is five years with zero residual value.

**Required:** How will the grant be **recognised** under **deferred income recognition approach** if Adam depreciates the asset under *either* straight line *or* at 40% reducing balance?

**Answer:** : IAS # 20 '**Accounting for Government Grants and Disclosure of Government Assistance**' requires **recognising** the grant in P/L using systematic and rational basis of matching the **recognised grant income** with relevant expense (depreciation in this case).

*When grant is received or receivable:*

**Dr:** Cash or Grant receivable \$30,000

**Cr:** **Deferred income -G.G** \$30,000 → non-current liability

*When grant is recognised in P/L:*

**Dr:** **Deferred income-G.G**

**Cr:** **Other income-G.G** → P/L

Year-end	Straight line depreciation		40% reducing balance	
	Asset depreciation	Grant recognition	Asset depreciation	Grant recognition
1	\$12,000	\$6,000	$\$60,000 \times 40\% = 24,000$	$\$30,000 \times 40\% = \$12,000$
2	12,000	6,000	$36,000 \times 40\% = 14,400$	$18,000 \times 40\% = 7,200$
3	12,000	6,000	$21,600 \times 40\% = 8,640$	$10,800 \times 40\% = 4,320$
4	12,000	6,000	$12,960/2 = 6,480^*$	$6,480/2 = 3,240^*$
5	12,000	6,000	$12,960/2 = 6,480$	$6,480/2 = 3,240$
<b>Total</b>	<b>60,000</b>	<b>30,000</b>	<b>60,000</b>	<b>30,000</b>

\*S.L is used in the last two years for simplicity.



## 3/1. Recognition of forgivable loans

1. **Forgivable loans** are **loans** that the lender undertakes to waive repayment of under certain prescribed conditions.
2. Under IAS # 20 a government **forgivable loan** is treated as **G.G** rather than a **loan** **when** there is **reasonable assurance** that the entity will meet the terms of forgiveness set forth in the loan agreement.

**Illustrative example:** Carmen participates in a government sponsored R&D program to invent a new product. Under the program Carmen is entitled to receive a **G.G** of up to 50% of the R&D costs that would be incurred. The **G.G** is **interest-bearing loan** at an annual **simple** interest rate of 8% **and fully repayable** based on a percentage of the sales revenue of the product developed. *Although* the repayment period is **not** limited; no repayment is required **if** there are no sales of the product.

Assume Carmen incurred \$2m as R&D up to 30, Sep, 2017 *and* received the **G.G** at that date.

**Required:** Describe the **accounting treatment** for this type of **G.G** assuming that there are no sales of the products up to the end of the first year of 30, Sep, 2018.

**Answer:**

1. Recording R&D expenses incurred at 30, Sep, 2017:

Dr: R&D expenses \$2m → P/L

Cr: Cash \$2m

2. Receiving the grant at 30, Sep, 2017:

Dr: Cash \$1m

Cr: Loan payable \$1m

**Initially;** the amount received is accounted for as a **loan**.

3. Recording finance cost at 30, Sep, 2018:

Dr: Finance cost ( $\$1m \times 8\%$ ) = \$80,000 → P/L

Cr: Loan payable \$80,000

**Continued:** Review at each SFP date *whether* there is **reasonable assurance** that the entity will meet the **terms for forgiveness of the loan**. *If* this is the case; *then* **derecognise** part or all of the liability initially recorded with **recognition** of corresponding portion in of P/L.

**Assume** at 30, Sep, 2019 it was determined that; no sales could be *resulted from the* R&D project *then*:

Dr: Finance cost ( $\$1\text{m} \times 8\%$ ) =  $\$80,000 \rightarrow \text{P/L}$

Cr: Loan payable  $\$80,000$

*And:*

Dr: Loan payable  $\$1,160,000$

Cr: Other income -G.G  $\$1,160,000 \rightarrow \text{P/L}$

**Continued:** *If* Carmen subsequently revises its estimates of future sales upwards; it reinstates the liability for any amounts previously included in P/L by recognising a corresponding **loss** in P/L.

**Assume** at 30, Sep, 2020 the product is successfully developed *and* proved to be commercially viable *then*;

**A. Reinstatement of previously written off loan:**

Dr: **Loss**  $\$1,160,000 \rightarrow \text{P/L}$ -treated as a change in accounting estimate

Cr: Loan payable  $\$1,160,000$

**B. Recording interest on the loan:**

Dr: Finance cost ( $\$1\text{m} \times 8\%$ ) =  $\$80,000 \rightarrow \text{P/L}$

Cr: Loan payable  $\$80,000$

*When* Carmen sells the product, it starts to repay the loan *and* calculate the finance cost on the balance unpaid.

**Summary:**

*When* **loan** is received:

Dr: Cash xxx

Cr: Loan payable xxx

*When* there is reasonable assurance that the entity will meet the terms of forgiveness:

Dr: Loan payable xxx

Cr: Other income-G.G  $\rightarrow$  *If* it is **recognised** immediately in P/L *or*

Cr: **Deferred income**-G.G  $\rightarrow$  *if* it is **recognised** in P/L on a **deferred basis** to match related expenses

## 4/1. Measuring and recognition

### of economic benefits of below market interest loans

Below-market interest **government loans** have an economic effect that should be **measured and reported** as a **G.G.** The **economic effect** is gauged by the difference between the **face amount of the loan** and the **P.V** of the future payments discounted by a relevant (market) interest rate.

**Illustrative example (1):** Ernest is encouraged to relocate to industrial region on 1, Jan, 2019 by an economic stimulus package that includes 5 years term loan of \$4m at an interest of 2% paid at each year-end *when* Ernest's marginal borrowing rate of 8%.

**P.V** factor of \$1 for 5 years at 8% is \$3.993.

**P.V** factor of \$1 at 8% payable at the end of 5 years is \$0.6806.

**Required:** Calculate the **G.G** assuming it is *related to past compliance* with specified conditions.

**Answer:**

**P.V** of the future payments discounted at 8% =  $[\$3.993 \times (\$4m \times 2\%)] + [(\$4m \times \$0.6806)] = \$3,041,840$ .

**G.G** =  $(\$4m - \$3,041,840) = \$958,160 \rightarrow$  **recognised** immediacy in P/L as income because it relates to past compliance (unconditional)

**Dr:** Cash \$4m

**Cr:** Loan payable \$3,041,840  $\rightarrow$  Carried at amortised cost

**Cr:** **Other income-G.G** \$958,160  $\rightarrow$  P/L

**Note:** If Ernest has **ongoing obligations** (such as to remain as an employer in the community *throughout* the term of the loan); then the \$958,160 should be **deferred and recognised** as **other income** in P/L (on a straight line basis) over the term of the obligation.

**First annual payment at year-end:**

**Dr:** Finance cost  $(\$3,041,840 \times 8\%) = \$243,347 \rightarrow$  P/L

**Cr:** Cash  $(\$4m \times 2\%) = \$80,000$

**Cr:** Loan payable  $(\$243,347 - \$80,000) = \$163,347$

**Note:** The balance of the **loan** payable at year-end =  $\$3,041,840 + \$163,347 = \$3,205,187$ .

*Thus;* the discount on the **loan** payable (the **grant** amount) is **recognised** over the 5-year term *through* increasing finance cost. *As such;* an effective rate of 8% on the **loan** balance will be reported as finance cost in Ernest's P/L reflecting the economic substance of its marginal borrowing rate.

**Illustrative example (2):** The local government of an underdeveloped region is trying to stimulate investment by allowing local entities to retain the Value Added Tax (VAT) on their sales. An entity participating in this scheme is entitled to retain an amount **up to 30%** of its investment in certain fixed assets.

The retained VAT must be paid to the local government after 5 years with **zero interest**.

Assume the entity collected \$5m VAT **during** the first year *and* made investment in the underdeveloped region at \$12m *and* the market interest rate is 6% on **average VAT** retained.

**Required:** How the previous event is accounted for?

**Answer:**

**Amount of free interest loan** =  $\$12\text{m} \times 30\% = \$3.60\text{m}$ .

1. The entity should pay the excess VAT of \$1.40m (\$5m - \$3.60m):

**Dr:** VAT payable \$1.40m

**Cr:** Cash \$1.40m

2. **Imputed interest on retained VAT** =  $\$3.60\text{m} \times 6\% = \$216,000$ .

*Thus;* at each year-end of the next 5 years, the following entry would be **recorded**:

**Dr:** Finance cost \$216,000 → P/L

**Cr:** **Other income-G.G** \$216,000 → Recognised in P/L because the entity satisfied the loan condition.

**Comment:** The deferred VAT liability of \$3.60m is comparable in nature to an interest free loan. The entity can **reasonably** measure the economic value of the free interest loan based on market interest rate *and* **recognise** it as **other income-G.G**.

## 5/1. Recognition and presentation of G.G<sup>s</sup> related to income

- ♦ **G.G related to income** is G.G<sup>s</sup> *other than* those *related to assets*.
- ♦ **G.G related to income** is given to subsidise expenditure *or* to help achieve non-financial goal *such as* achievement of a certain employment rates in undeveloped area.

### Cases triggering **G.G<sup>s</sup> related to income**:

#### A. **G.G<sup>s</sup> in recognition of specific costs that will be borne by the entity**

1. **G.G related to income** should be **recognised** in P/L in a systematic *and* rational basis to **match** the related costs.
2. G.G<sup>s</sup> received *or* receivable in recognition of **specific costs** to be borne by the entity are **recognised** in P/L over the same period as the relevant expense incurred *either* as **other income** (gross method) *or* deducted from the related expense (net method).

**Illustrative example:** An entity received G.G of \$39m to defray (pay) environmental costs over a period of five years as follows:

Year	1	2	3	4	5	Total
Costs	\$2m	\$4m	\$6m	\$8m	\$10m	\$30m

Required: How the **G.G related to income** is **recognised** in P/L?

Answer:

1. *When the G.G is received:*

Dr: Cash \$39m

Cr: **Deferred income-G.G** \$39m

2. **G.G related to income** can be **presented** in P/L in *either* one of the following:



Gross method		Net method	
G.G is <b>recognised</b> as <b>other income</b> over the same period as the relevant expense		G.G is deducted from the related expense	
Dr: <b>Deferred income-G.G XX</b> Cr: <b>Other income-G.G XX</b>		Dr: <b>Deferred income-G.G XX</b>	
Year	Amount <b>recognised</b>	Year	Amount <b>recognised</b>
1	$39m \times (2/30) = \$2.60m$	1	Cr: <b>Other income-G.G</b> \$0.60m      Cr: Expenses \$2m
2	$39m \times (4/30) = 5.20m$	2	Cr: <b>Other income-G.G</b> \$1.20m      Cr: Expenses \$4m
3	$39m \times (6/30) = 7.80m$	3	Cr: <b>Other income-G.G</b> \$1.80m      Cr: Expenses \$6m
4	$39m \times (8/30) = 10.40m$	4	Cr: <b>Other income-G.G</b> \$2.40m      Cr: Expenses \$8m
5	$39m \times (10/30) = 13m$	5	Cr: <b>Other income-G.G</b> \$3m      Cr: Expenses \$10m
IAS # 20 does not favor <i>either</i> option. <i>However</i> disclosure of the effect of the G.G on any item of income <i>or</i> expense is <b>required</b> .			

**B. G.G<sup>s</sup> received/receivable as compensation for expenses or losses already incurred or for the purpose of giving immediate financial support to the entity with no future related costs**

The G.G may be awarded for giving immediate **financial support** to the entity for example G.G is awarded to revive a commercial insolvent business (sick unit) *or* to **compensate** it for **losses** incurred in the past for operating out in an economically backward area that has been hit recently by an earthquake. Such **grants** are **not** given as incentives to invest funds in a specified area *or* for a specified purpose from which the benefits will be derived over a future period of time; *instead* the **grant** is awarded to **compensate** the entity for **expenses/losses** incurred in the past. *Thus*; it should be **recognised** as **income** in the period in which the entity becomes eligible to receive such grant (i.e. the grant become receivable).

## 6/1. Overview

1. G.G<sup>s</sup> *related to* assets are grants whose **primary condition** for the entity to qualify for that type of grants is to acquire (purchase *or* construct) a long-term depreciable *or* non-depreciable **asset** *such as* factory *or* land.

Note: **Secondary conditions** may also be attached to that grant *such as* specifying the type of that asset, its minimum value *or* its location *and* periods during which that asset to be acquired *or* held...etc.

2. G.G<sup>s</sup> *related to* assets could be either **monetary** *or* **non-monetary** *such as* grant of a piece of land *or* a building in an economically disadvantaged area.

## 6/2. Accounting for monetary grants related to assets

**Illustrative example:** David entitled to receive a **grant** of \$4m *if* it purchased for \$10m a factory building repossessed by the city. The useful life of the factory is estimated at four years.

**Required:** Explain the options given under IAS # 20 to account for that **grant related to assets**.

**Answer:** IAS # 20 prescribes the following **optional presentation and recognition** methods in the SFP and P/L of G.G *related to asset* that is received (*or* receivable) in a **monetary form**:

Separate presentation in P/L and SFP	Net presentation in P/L and SFP
<p><b>1. Initially</b> the <b>non-monetary asset</b> is <b>recorded</b> at its <b>F.V separately</b> from the <b>grant</b> received (<i>or</i> receivable) in <b>monetary form</b> <i>and</i> the related <b>monetary</b> amount of the <b>grant</b> is initially <b>presented</b> as <b>deferred income</b>.</p> <p>At the date <i>when</i> the factory is purchase:</p> <p>Dr: PPE \$10m</p> <p>Cr: Cash \$10m</p> <p>At the date the <b>grant</b> received:</p> <p>Dr: Cash \$4m</p> <p>Cr: <b>Deferred income-G.G</b> \$4m → non- current liability.</p> <p><b>2. Subsequently;</b> separately depreciate the asset (<i>if</i> depreciable) <i>or</i> <b>recognise</b> the expenses conditioned by the <b>grant</b> <i>and</i> <b>recognise</b> the matching amount of the <b>deferred grant</b> in P/L as <b>other income</b> in a <b>systematic and rational manner</b> over the useful life of the asset.</p>	<p><b>1. Initially;</b> the <b>monetary</b> amount of the <b>grant</b> is <b>netted off</b> the cost of the asset.</p> <p>At the date <i>when</i> the factory is purchased:</p> <p>Dr: PPE \$10m</p> <p>Cr: Cash \$10m</p> <p>At the date the <b>grant</b> received</p> <p>Dr: Cash \$4m</p> <p>Cr: <b>Deferred income-G.G</b> \$4m</p> <p>Adjusting entry to report the factory at its nominal amount</p> <p>Dr: <b>Deferred income</b> -G.G \$4m</p> <p>Cr: PPE \$4m</p> <p><b>2. Subsequently</b> reduced depreciation (<i>if</i> the related asset is depreciable) is <b>recognised</b> in P/L over the asset's useful life.</p>

At each year-end for the next 4 years		At each year-end for the next 4 years
Dr: Dep. Exp \$2.50m Cr: Acc. Dep \$2.50m	Dr: <b>Deferred income</b> -G.G \$1m Cr: <b>Other income</b> -G.G \$1m	Dr: Dep. Exp \$1.50m Cr: Acc. Dep \$1.50m
The asset balance	The <b>deferred income</b> -GG balance	The asset balance
Beginning of year 1 → \$10m	Beginning of year 1 → \$4m	Beginning of year 1 → \$6m
Ending of year 1 → 7.50m	Ending of year 1 → 3m	Ending of year 1 → 4.50m
Ending of year 2 → 5m	Ending of year 2 → 2m	Ending of year 2 → 3m
Ending of year 3 → 2.50m	Ending of year 3 → 1m	Ending of year 3 → 1.50m
Ending of year 4 → 0	Ending of year 4 → 0	Ending of year 4 → 0
<p style="text-align: center;"><b>Notes:</b></p> <p>1. The effect on the operating results is the same under <i>either</i> option chosen.</p> <p>2. Under the <b>separate presentation option</b>, the grant is directly <b>recognised</b> as <b>other income</b> <i>whereas</i> under the <b>net presentation option</b>, the grant is indirectly <b>recognised</b> in income through the reduction of the annual related expense (depreciation charge)</p> <p>3. IAS # 20 does <b>not</b> favor <i>either</i> <b>option</b>, both are acceptable. <i>However</i> disclosure of the effect of the <b>grants</b> on any item of income <i>or</i> expense is <b>required</b>.</p> <p>4. The amount of <b>grant</b> received is <b>not offset</b> in the <b>statement of cash flows</b> with the amount paid to acquire the related asset; each is <b>presented</b> separately in the <b>financing and investing</b> activities sections respectively <i>regardless</i> of <i>whether or not</i> the <b>grant</b> is deducted from the related asset for the purposes of the SFP <b>presentation</b>.</p>		

**Illustrative example:** Erwin was granted 800 acres of land by a local government authority. The condition attached to this grant was that; Erwin should clean up this land *and* lay roads by employing labors from the village in which the land is located. The entire operation will take four years *and* is estimated to cost \$80m. This amount will be spent as follows: \$15m each in the first *and* second years *and* \$25m in the third *and* fourth year.

The F.V of this land is presently \$160m.

Required: How the non- monetary grant is accounted for under IAS # 20?

Answer:

IAS # 20 prescribes the following **optional presentation and recognition** methods of **non-monetary grants related to assets** in the SFP *and* P/L:

Gross method	Net method																														
<p>A. <b>Initially</b> capitalise the <b>non-monetary asset</b> granted at F.V separately from any related obligations necessary to be incurred for the grant eligibility:</p> <p>Dr: PPE-G.G \$160m</p> <p>Cr: <b>Deferred income</b>-GG \$160m</p> <p>B. <b>Subsequently</b> recognise the deferred grant into P/L in a systematic <i>and</i> rational manner in proportion to the depreciation charge <i>if</i> the granted <b>non-monetary asset</b> is depreciable <i>or</i> the related expenses <i>if</i> the granted <b>non-monetary asset</b> is non-depreciable.</p> <p>Amount annually recognised as other income:</p> <table><tr><th>Year</th><th>Grant recognised</th></tr><tr><td>1</td><td><math>\\$160m \times (15/80) = \\$30m</math></td></tr><tr><td>2</td><td><math>160m \times (15/80) = 30m</math></td></tr><tr><td>3</td><td><math>160m \times (25/80) = 50m</math></td></tr><tr><td>4</td><td><math>160m \times (25/80) = 50m</math></td></tr><tr><td>Total</td><td>160m</td></tr></table>	Year	Grant recognised	1	$\$160m \times (15/80) = \$30m$	2	$160m \times (15/80) = 30m$	3	$160m \times (25/80) = 50m$	4	$160m \times (25/80) = 50m$	Total	160m	<p><b>Presentation manner (1)</b></p> <p><b>Immediate recognition</b></p> <p>At the date land received:</p> <p>Deduct the expenses required to be incurred from the F.V of the <b>non-monetary asset</b> granted <i>and</i> capitalise the <b>non-monetary asset</b> granted at net amount.</p> <p>Dr: PPE-G.G \$80m</p> <p>Cr: <b>Deferred income</b>-G.G \$80m</p> <table><tr><th>Year</th><th>Recording annual expense incurred</th></tr><tr><td>1</td><td>Dr: <b>Deferred income</b> \$15m Cr: Cash \$15m</td></tr><tr><td>2</td><td>Dr: <b>Deferred income</b> \$15m Cr: Cash \$15m</td></tr><tr><td>3</td><td>Dr: <b>Deferred income</b> \$25m Cr: Cash \$25m</td></tr><tr><td>4</td><td>Dr: <b>Deferred income</b> \$25m Cr: Cash \$25m</td></tr></table>	Year	Recording annual expense incurred	1	Dr: <b>Deferred income</b> \$15m Cr: Cash \$15m	2	Dr: <b>Deferred income</b> \$15m Cr: Cash \$15m	3	Dr: <b>Deferred income</b> \$25m Cr: Cash \$25m	4	Dr: <b>Deferred income</b> \$25m Cr: Cash \$25m								
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<p><b>Annual recognition of grant income and related expense</b></p> <table><tr><th>Year</th><th>Grant recognised</th><th>Expenses recognised</th></tr><tr><td>1</td><td>Dr: <b>Deferred income</b> \$30m Cr: <b>Other income</b>-G.G \$30m</td><td>Dr: Expenses \$15m Cr: Cash \$15m</td></tr><tr><td>2</td><td>Dr: <b>Deferred income</b> \$30m Cr: <b>Other income</b>-G.G \$30m</td><td>Dr: Expenses \$15m Cr: Cash \$15m</td></tr><tr><td>3</td><td>Dr: <b>Deferred income</b> \$50m Cr: <b>Other income</b>-G.G \$50m</td><td>Dr: Expenses \$25m Cr: Cash \$25m</td></tr><tr><td>4</td><td>Dr: <b>Deferred income</b> \$50m Cr: <b>Other income</b>-G.G \$50m</td><td>Dr: Expenses \$25m Cr: Cash \$25m</td></tr></table>	Year	Grant recognised	Expenses recognised	1	Dr: <b>Deferred income</b> \$30m Cr: <b>Other income</b> -G.G \$30m	Dr: Expenses \$15m Cr: Cash \$15m	2	Dr: <b>Deferred income</b> \$30m Cr: <b>Other income</b> -G.G \$30m	Dr: Expenses \$15m Cr: Cash \$15m	3	Dr: <b>Deferred income</b> \$50m Cr: <b>Other income</b> -G.G \$50m	Dr: Expenses \$25m Cr: Cash \$25m	4	Dr: <b>Deferred income</b> \$50m Cr: <b>Other income</b> -G.G \$50m	Dr: Expenses \$25m Cr: Cash \$25m	<p><b>Presentation manner (2)</b></p> <p><b>Gradual recognition</b></p> <p>At the date land received:</p> <p>No entry is made; the land would be recognised gradually at net as follows:</p> <table><tr><th>Year</th><th>Recording expense incurred</th><th>Grant recognised</th></tr><tr><td>1</td><td>Dr: Expenses \$15m Cr: Cash \$15m</td><td>Dr: PPE-G.G \$15m Cr: Expenses \$15m</td></tr><tr><td>2</td><td>Dr: Expenses \$15m Cr: Cash \$15m</td><td>Dr: PPE- G.G \$15m Cr: Expenses \$15m</td></tr><tr><td>3</td><td>Dr: Expenses \$25m Cr: Cash \$25m</td><td>Dr: PPE-G.G \$25m Cr: Expenses \$25m</td></tr><tr><td>4</td><td>Dr: Expenses \$25m Cr: Cash \$25m</td><td>Dr: PPE-G.G \$25m Cr: Expenses \$25m</td></tr></table>	Year	Recording expense incurred	Grant recognised	1	Dr: Expenses \$15m Cr: Cash \$15m	Dr: PPE-G.G \$15m Cr: Expenses \$15m	2	Dr: Expenses \$15m Cr: Cash \$15m	Dr: PPE- G.G \$15m Cr: Expenses \$15m	3	Dr: Expenses \$25m Cr: Cash \$25m	Dr: PPE-G.G \$25m Cr: Expenses \$25m	4	Dr: Expenses \$25m Cr: Cash \$25m	Dr: PPE-G.G \$25m Cr: Expenses \$25m
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4	Dr: Expenses \$25m Cr: Cash \$25m	Dr: PPE-G.G \$25m Cr: Expenses \$25m																													
<p>Notes: IAS # 20 does not favor <i>either</i> option both methods are acceptable. <i>However</i> disclosure of the effect of the grants on any item of income <i>or</i> expense is required.</p>																															



#### 6/4. G.G<sup>s</sup> received with a number of conditions attached

When different **conditions attach** to different components of the grant; the terms of the grant would have to be **evaluated** in order to determine how the various elements of the G.G would be **recognised** as **income** by the entity. Based on that assessment the total grant amount would *then* be **apportioned and recognised**.

**Illustrative example:** On 1, Oct, 2019 Ferry opened a new factory in an area designated by the government as an economic development area. On that day the government provided Ferry with a grant of \$50m to assist it in the development of the factory. This grant was in two parts:

1. \$30m of the grant *related to* the construction of a large factory at a cost of \$90m. The land was leased so the whole of the \$90m is depreciable over the estimated 40 year useful life of the factory.

2. The remaining \$20m was received **subject to** keeping at least 250 employees working at the factory for a period of at least five years. *If* the number drops below 250 at any time in any financial year during this five year period; *then* 1/5 of the grant is repayable in that year. From 1, Oct, 2019 Ferry employed 280 workers at the factory *and* estimates are that this number is likely to increase over the next four years. Your assistant has **recognised** the \$30m received in respect of the factory in the statement of P/L in the current year on the basis that; the factory has been constructed *and* brought into use. He has **not recognised** any of the \$20m employment grant on the basis that this is potentially repayable. He has charged \$2.25m in depreciation to the statement of P/L.

**Required:** Evaluate the proposed **accounting treatments** *and* (where incorrect) explain the appropriate **accounting treatment** (preparing relevant calculations *where necessary*) of the previous transaction in the F/S<sup>e</sup> for the year-ended 30, Sep. 2020.

**Answer:**

1. **Accounting for government grants** is dealt with by IAS # 20 '**Accounting for Government Grants and Disclosure of Government Assistance**'.

2. The basic principle of IAS # 20 is that; grants should be **recognised** as income over the periods necessary to **match** them with the related costs which they are intended to compensate on a **rational and systematic** basis.

3. *Where* the grant *relates to* an asset IAS # 20 allows **two methods** of **presentation** in the SFP:

A. The first method sets up the grant as **deferred income** *and then* credits the grant to **income** over the life of the asset.

Dr: Cash \$30m *and* Cr: **Deferred income** \$30m.

In this case this would mean **recognising** \$750,000 ( $\$30m \times 1/40$ ) as a credit to P/L in the current year.

Dr: **Deferred income** \$0.75m *and* Cr: **Other income** \$0.75m. The balance of \$29.25m ( $\$30m - \$0.75m$ ) **presented** in the SFP as a **liability**. \$750,000 of this amount would be shown as a **current liability** with the balance of \$28.50m shown as a **non-current liability**.

B. The second permitted method deducts the portion of the grant *related to* the **asset** from the cost of the asset showing in this case a reduced cost of \$60m ( $\$90m - \$30m$ ). This would *result in* a reduced depreciation charge to \$1.50m giving the **same net result** in the statement of P/L under both methods.

4. The same principle applies to the grant *related to* the **employment of staff**. The grant is probably **not** going to be repaid so **delaying recognition** is **inappropriate**. *Unless* the likelihood of repayment is remote; *then* it would be appropriate to **disclose** the possible repayment as a contingent liability. \$4m ( $\$20m \times 1/5$ ) of the employment grant should be **recognised** in the statement of P/L for the current year. IAS # 20 allows this amount *either* to be shown as '**other income**' or as a reduction in the relevant expense. The unrecognised balance of \$16m ( $\$20m - \$4m$ ) would be **presented** as **deferred income** with \$4m shown as a **current liability** *and* \$12m as a **non-current liability**.

### **7/1. Recognition of repayable G.G**

1. When a G.G becomes repayable due to non-fulfillment of a condition attaching to it; it should be treated **prospectively** as a change in accounting estimate under IAS # 8 'Accounting Policies, Changes in Accounting Estimates and Errors'

2. Accounting recognition of repaid grant is as follows:

A. Repayment of a grant related to income:

1). Reduce any unamortised balance of **deferred income** to zero.

Dr: **Deferred income-G.G** \$XX

Cr: Cash \$XX

2). Any excess amounts repaid should be **recognised** immediately as an **expense**.

B. Repayment of a grant related to an asset:

The **accounting treatment** would depend on *whether* the grant is initially **recorded** separately from the F.V of the related asset *or* the grant is initially reduced the carrying amount of the *related* asset.

**Illustrative example:** At 1, Jan, 2017 Sandy invests \$5m in an item of plant which has an anticipated useful life of five years. Depreciation is **recognised** on a straight-line basis. In the year of acquisition, Sandy received a G.G of \$2m towards the purchase of this plant which is **conditional** on certain employment targets being achieved within the next five years. At 31, Dec, 2019 it is evident that the employment targets will **not** be achieved *and therefore* the **criterion** attached to the receipt of this grant has been failed. The grant becomes **repayable**.

Required: Explain the **accounting treatment** under the two methods of **presentation** of the grant?

Answer:

<b><i>If the grant recorded separately from the related asset:</i></b>	<b><i>If the related asset is initially reduced by the grant:</i></b>
<p>♦ Amount amortised to <b>other income</b> of <b>deferred grant</b> up to 31, Dec, 2019 = <math>\\$2m \times 3/5 \text{ years} = \\$1.20m</math>.</p> <p>♦ Balance of <b>deferred grant</b> at 31, Dec, 2019 = <math>\\$2m - \\$1.20m = \\$0.80m</math>.</p> <p><b>Recording the repayment:</b></p> <p><b>Dr: Deferred income-G.G</b> \$0.80m</p> <p><b>Dr: Other expenses</b> \$1.20m</p> <p><b>Cr: Cash</b> \$2m</p> <p><b>Note:</b> Under this method the <b>repayment</b> does not impact the carrying amount of PPE of \$2m (<math>\\$5m \times 2/5</math>) or depreciation expense recognised.</p>	<p><b>A. The asset carrying value before repayment</b> = <math>[(\\$5m - \\$2m) \times 2/5] = \\$1.20m</math>.</p> <p><b>B. Recording the repayment</b> by increasing the amount of the asset:</p> <p><b>Dr: PPE</b> \$2m</p> <p><b>Cr: Cash</b> \$2m</p> <p><b>C. The asset carrying value after repayment</b> = <math>\\$1.20m + \\$2m = \\$3.20m</math>.</p> <p><b>D. Recording the increased depreciation</b> that should have been charged in the past to P/L immediately:</p> <p>♦ Cumulative additional depreciation that would have been <b>recognised</b> to date = <math>\\$2m \times 3/5 \text{ years} = \\$1.20m</math>.</p> <p><b>Dr: Dep. Exp</b> \$1.20m → <b>Recognised</b> immediately in P/L</p> <p><b>Cr: Acc. Dep</b> \$1.20m</p> <p><b>Thus, the adjusted carrying value of the asset</b> = <math>\\$3.20m - \\$1.20m = \\$2m</math>.</p>

### 9/1. Government Assistance

1. Government assistance is a government action designed to provide an economic benefit **specific** to entities qualifying under certain criteria.

2. Government assistance include; G.G<sup>s</sup> and other kinds of **non-monetary** government assistance (**where no transfer of resources is involved**).

3. Examples of government assistance include; the provision of free training, legal, marketing and technical advice or other incentives to an entrepreneur for setting up a business in a free trade zone.

4. Government assistance **exclude** benefits provided indirectly through actions affecting trading conditions in general such as the provision of infrastructure in development areas (i.e. laying roads that connect the industrial area to the nearest city) or the imposition of trading constraints on foreign competitors in order to protect domestic entrepreneurs and supply of improved facilities such as irrigation or water reticulation that is available for the benefit of an entire local community.

Remember: IAS # 20 deals with both **accounting** and disclosure of G.G<sup>s</sup> but **only disclosure of significant direct** government assistance because it does not involve transfer of resources. So it can't be measured reliably.



### 10/2. Problems with IAS # 20

1. **Accounting for G.G<sup>s</sup> as a deferred income** is considered by some to be inconsistent with IASB's Conceptual Framework for financial reporting because:

A. G.G<sup>s</sup> are a financing device *and* should be **recognised** as **equity** in the SFP *if repayment* is remote *and* not **recognised** in P/L. The rebuttal argument is that; G.G<sup>s</sup> do not come from shareholders; *and*

B. It is inappropriate to **recognise** G.G<sup>s</sup> in P/L because they are **not earned** *but* represent an incentive provided by government. **The rebuttal argument** is that; G.G<sup>s</sup> usually comes with obligations to incur costs.

2. Reducing the carrying amount of assets by a G.G<sup>s</sup> is **not** accepted by some.

3. IAS # 20 contains too many alternative treatments.



**1/1. Examinable syllabus guide for**  
**DECEMBER 2024 TO JUNE 2025 according to ACCA**

**Agriculture**

- Recognise the scope of IFRS Accounting Standards for agriculture.
- Discuss the recognition and measurement criteria including the treatment of gains and losses, and the inability to measure fair value reliably.
- Identify and explain the treatment of government grants, and the presentation and disclosure of information relating to agriculture.
- Report on the transformation of biological assets and agricultural produce at the point of harvest and account for agriculture related government grants.

After studying our material and solving related questions, please refer back to the points above to make sure you fully cover it well.

## 1/2. Overview

1. The importance of the **agricultural** sector in most country's economy is significant. Before issuance of IAS # 41 the accounting treatments in **agricultural activities** was characterised by a great diversity. Cows for example were **accounted for** as 'inventories' in Ireland *but* as 'non-current **assets**' in the UK.

### 2. **The problem:**

It is quite difficult to apply traditional accounting methods to **agricultural activities** because it demonstrates **fundamental differences** in its *nature and characteristics* to other business activities, for example;

A. When *and* how the critical events associated with **biological transformation** which alters the substance of **biological assets** can be **accounted for**?

B. What is the proper classification of the **biological assets** in the SFP?

C. What is the unit of **measurement** i.e. *whether* **biological assets** are a perpetual group of **assets** or a number of **limited life assets**?

3. IAS # 41 '**Agriculture**' (funded from the World Bank) issued in Feb, 2001 to **harmonise accounting treatments and increase comparability** among **agricultural activities** in different countries.

### 1/3. Definitions

**1. Biological assets** are **living animals** (livestock) *such as* sheep for wool, lamb for food *and* dairy cattle *or* **living plants** for crop *such as* **planted** trees, vines for grape, **plants before harvest** to grow cotton, tea *or* extract sugar *and* forestry to get timber.

**2. A group of biological assets** is an aggregation of similar **living animals or plants**.

**3. Biological transformation of living animals and plants** comprises the processes of **growth, procreation, production and degeneration** that cause **qualitative changes** (fat cover, wool density, etc...) *and* **quantitative changes** (progeny, live weight etc...) over time in a **biological asset** which can be **measured** objectively.

*Thus; biological transformation results in the following types of outcomes:*

**A. Growth;** an increase in quantity *or* improvement in quality of a **living animal or plant**;

**B. Procreation;** creation of additional **living animals** *through* breeding;

**C. Production;** of **agricultural produce** *such as* latex from trees, tea leaf, wool *and* milk;

**D. Degeneration;** a decrease in the quantity *or* deterioration in quality of an **animal or living plant** *due to* age *and* other factors.

**Note:** Biological transformation is the source of the **agricultural sector uniqueness**.

**4. Agricultural produce (harvest);** is the **harvested product** of the **biological asset** *such as* apples from trees, milk from cows *and* meat from **animals**, wool from sheep *and* grapes from vines.

**Note:** **Agricultural produce** is diverse *and* may require further processing before consumption. IAS # 41 is **not applicable** to further processing activities.

**5. Harvest;** is the detachment of **agricultural produce** from a **biological asset** *or* the cessation of a biological asset's life.

**6. Agricultural activity;** is the management of the biological transformation *and* the **harvest of biological assets** into **agricultural produce**.

**Examples;** raising livestock, forestry activities, cropping, cultivating orchards, pastoral activities, plantations, floriculture *and* aquaculture *including* fish farming.

**7. Fair value (F.V);** is the price that would be received to sell an asset *or* paid to transfer a **liability** in an orderly transaction between market participants at the **measurement date** (IFRS **Accounting Standard** # 13' Fair value measurement').

## Application of definitions

**Illustrative example (1):** For each of the following transactions determine the appropriate term:

A. A farmer buys a dairy calf;

B. The calf grows into a mature cow;

C. The farmer milks the cow.

Answer:

Transaction	Appropriate term
A farmer buys a dairy calf.	The calf is a <b>biological asset</b> .
The calf grows into a mature cow.	<b>Growth</b> ; a type of <b>biological transformation</b> .
The farmer milks the cow.	The milk has been <b>harvested</b> . Milk is an <b>agricultural produce</b> .

**Illustrative example (2):** For each of the following **biological assets** determine:

A. **Agricultural produce (harvest)**;

B. Products that are the result of processing after **harvest**;

C. *Whether* the products that are the result of processing after **harvest** are subject to IAS # 41 or not.

Biological assets
1. Sheep
2. Planted trees in forest
3. Plants
4. Dairy cattle
5. Pigs
6. Bushes
7. Vines
8. Fruit trees

Answer:

Biological assets	Agricultural produce (harvest)	Products that are the result of processing after harvest
1. Sheep	Wool	Yarn, carpet
2. Planted trees in forest	Logs	Lumber
3. Plants	Cotton, harvested cane	Textiles, sugar
4. Dairy cattle	Milk	Cheese
5. Pigs	Carcass	Sausages, cured hams
6. Bushes	Leaf	Tea, cured tobacco
7. Vines	Grapes	Wine
8. Fruit trees	Fruit	Juice

IAS # 41 is not applicable to further processing activities.

Ex<sub>1</sub>: Distinguish between a **biological asset** and **agricultural produce**.

Answer: A **biological asset** is a **living animal or plant** whereas **agricultural produce** is the **harvested produce** of an entity's **biological assets**.

Ex<sub>2</sub>: Give examples of **biological assets** and their relative **agricultural produce**.

Answer: Examples of **biological assets** and **agricultural produce** are:

Biological asset	Agricultural produce
Sheep	Wool
Pigs	Meat
Dairy cattle	Milk
Fruit tree	Oranges etc...
Plant	Cotton
Bush	Tea leaves
Vine	Grapes
Chicken	Eggs



#### 1/4. IAS # 41-General issues *and* Scope

**1. Consistency** requires that both **biological assets** *and* **agricultural produce** should be **measured** using the **same** basis of measurement. The existence of **active** *and* **efficient markets** for both **biological assets** *and* **produce** makes **market based** measures are more reliable.

**2.** Measuring biological assets as a **collective class** *rather than* individual members *even though* individual members have a limited life is **more reliable** *and* consistent with going concern.

**3.** Agricultural activities have different risks *and* rewards *therefore* it should be **reported** under **different segments** (IFRS Accounting Standard # 8).

Scope of IAS # 41	Scoped out
<b>1. Biological assets</b> used in agricultural activity. Note: <b>animals</b> in a zoo <i>or</i> game park would be <b>outside</b> the scope of IAS # 41.	<b>1. Only Plant-based-Bearer</b> biological assets are <b>accounted for</b> under IAS # 16 'PPE'.
<b>2. Agricultural produce at the point of harvest.</b>	<b>2.</b> After harvest IAS # 2 'inventory' applies.
<b>3. Government grants (G.Gs)</b> related to Agricultural activities.	<b>3. Land</b> used in <b>agricultural activities</b> are accounted for under IAS #16 'PPE' <i>or</i> IAS # 40 'Investment Property' as relevant.
	<b>4. Intangible assets</b> related to <b>agricultural activities</b> are accounted for under IAS # 38 'Intangible Assets'.

## **2/1. Overview**

1. **Biological assets** are the **core income-producing assets** of **agricultural activities**. **Biological assets** are held for their **transformative capabilities** (trees for fruit *and* chicken for eggs) because **biological transformation changes** affect the current *and* future flow of economic benefits.

2. **Biological assets** are *either*:

**A. Consumable**; are those **biological assets** that are to be **harvested** themselves as **agricultural produce**.

*Such as* livestock intended for the production of meat *or* sold alive.

**B. Bearer**; are those **biological assets** held to generate **agricultural produce**.

*Such as* livestock held to produce milk *or* for breeding, fruit trees *and* trees from which firewood is **harvested** *while* the tree remains *without* felling (called **plant based bearer biological assets**).

Note: Only **plant based bearer biological assets** are subject to IAS # 16 *and* **presented** under PPE.

## 2/2. Recognition of biological assets

The recognition criteria of **biological assets** are basically consistent with Framework definition of an **asset** where; **living animals or plants** should be **recognised** as **assets** if:

1. The entity **controls** the **biological asset** *as a result of* **past event** (legal ownership *or* birth);
2. It is **probable** that the future economic benefits associated with the **biological asset** will **flow** to the entity; *and*
3. The **F.V** (*or* cost) of the **biological asset** can be **measured** reliably.

## 2/3. Measurement of biological assets

### A. Measurement on initial recognition

Biological assets are **initially** measured at **F.V less estimated point-of-sale costs**. G/L<sup>s</sup> are recognised in P/L.

A **gain** is recognised in P/L when a new **biological** asset is born or grows.

A **loss** is recognised in P/L when **biological** asset is degenerated or dies.

Note: An expense is recognised in P/L for purchased **biological** assets at the amount of **cost** to sell.

**Illustrative example:** An entity purchased 20 cows for \$60 each during the year. Assume **cost to sell** was 2%

Required: What is the appropriate entry for the above event?

Answer:

Dr: **Biological assets** (20 cows × \$60 × 98%) = \$1,176 → **F.V less estimated point-of-sale costs**

Dr: Expenses (20 × \$60 × 2%) = \$24 → P/L

Cr: Cash \$1,200

#### Measurement unit

**Biological** assets with similar characteristics (e.g. male/female or under age 5 /over age 5 or sheep for wool/sheep for meat) are **measured** as a **groups** to allow for sustainability in perpetuity.

### B. Subsequent measurement

At each reporting date **biological** assets that remain should be measured at **F.V less estimated point-of-sale costs**. The changes in value are recognised as **G/L** in P/L for the period in which they arise.

1. **F.V measure** of **biological** assets has greater relevance, reliability, comparability and understandability as a measure of future economic benefits than historical cost *especially when* an active market exists for the **biological** asset.

2. **Exception:** *If* the **F.V** can't be **initially** determined because market prices or values are **not available then;** the **biological** asset can be measured at **cost** less accumulated depreciation and impairment losses. Once the **biological** asset's **F.V** can be measured reliably, it should be re-measured to **F.V less estimated point-of-sale costs** and the resulting **G/L** is recognised in P/L.

3. *If* **F.V** was used on **initial recognition then;** it should continue to be used.

4. **F.V** of a **biological** asset is determined in reference to **F.V** hierarchy set forth under IFRS Accounting Standard #13. Accordingly; IAS # 41 allowed several ways of measuring **F.V**.

5. IFRS Accounting Standard #13 requires the **F.V** of the asset to be determined by reference to the **principal market** for that asset.

This may or may not be the most favorable market and in the absence of a principal market, the **most advantageous market** is used to determine **F.V**.

6. The **most advantageous market** is the market which **maximises** the net selling price that an entity will receive.

Notes:

A. **Transportation costs** are deducted first to arrive at F.V.

B. **Estimated costs to sell** include; commissions to brokers *and* dealers, levies by regulatory agencies *and* commodity exchanges, transfer taxes *and* duties *but exclude transportation costs* *and* other costs necessary to get **assets** to the point of sale (market) because these costs are **subtracted** in determining F.V.

**Illustrative example (1):** Raiser obtained the following prices at the reporting date from the two available markets:

Description	Market (1)	Market (2)
Estimated selling price (\$m)	2.60m	2.80m
Cost of transporting cattle to market (\$m)	0.10m	0.40m
Costs to sell (as % of selling price)	½%	½%

The carrying value of the herd at year-end amounted to \$2.10m.

Required: How the F.V of the herd is determined at year-end assuming the **principal market** can't be determined.

Answer:

A. At the reporting date **biological assets** are **re-measured** to F.V less **estimated point-of-sale costs** with **G/L** reported in P/L.

B. F.V is defined as the price that would be received from selling an **asset** in an orderly transaction between market participants at the **measurement date**.

C. F.V is determined by reference to the **principal market** *or* in the absence of a principal market, the **most advantageous market**.

D. The **principal market** can't be determined *so* the F.V of the **biological assets** at year-end must be determined with reference to the **most advantageous market**.

E. The **most advantageous market** is the market which **maximises** the **net** selling price that the entity will receive.

(I): The net price received in market (1) is **\$2.487m** [(\$2.60m × 99.50 %) - \$0.10m].

(II): The net price received in market (2) is **\$2.386m** [(\$2.80m × 99.50 %) - \$0.40m].

Thus; market (1) is the **most advantageous market** *and* should be used to determine F.V.

F. The F.V of the **herd** is **\$2.50m** (\$2.60m - \$0.10m) *and* the F.V less **estimated point-of-sale costs** is **\$2.487m**.

The herd should be **recognised** at **\$2.487m** at the reporting date *and* a **gain** of \$0.387m (\$2.487m - \$2.10m) will be recorded in P/L as follows:

Dr: **Biological assets** \$0.387m

Cr: F.V **gain** \$0.387m → P/L



**Illustrative example (2):** During the year Olympic purchased 100 calves at \$40 each. A point-of-sale cost at that time was 2%. At the year-end F.V less estimated point-of-sale costs were \$45 each.

Required: Calculate the amount to be recognised in P/L for the year.

Answer:

A. Amount recognised as expenses at the date of purchase =  $100 \text{ calves} \times \$40 \times 2\% = \$80$ .

B. Net amount capitalised as biological assets at the date of purchase =  $100 \text{ calves} \times \$40 \times 98\% = \$3,920$ .

Dr: Biological assets \$3,920 → F.V less estimated point-of-sale costs

Dr: Expenses \$80 → P/L

Cr: Cash \$4,000

C. Net amount capitalised as biological assets at the year-end =  $100 \text{ calves} \times \$45 = \$4,500$ .

D. Amount recognised as gain at year-end =  $\$4,500 - \$3,920 = \$580$ .

Dr: Biological assets  $(\$4,500 - \$3,920) = \$580$

Cr: F.V gain \$580 → P/L

Thus: Net amount recognised as gain for the year =  $\$580 \text{ gain} - \$80 \text{ expenses} = \$500$ .

E. All operating expenses incurred during the period relating to breeding and feeding those biological assets are recognised in P/L.

**Illustrative example (3):** On 1, Jan, 2019 a farmer had a herd of 100 cows all of which were 2 years old. At this date the F.V less estimated point-of-sale costs of the herd was \$10,000. On 1, July, 2019 the farmer purchased 20 cows (each two and half years old) for \$60 each. As at 31, Dec, 2019 three year old cows sell at market for \$90 each.

Market auctioneers have charged a sales levy of 2% for many years.

Required: Discuss the accounting treatment of the above in the F/S<sup>1</sup> for the year-ended 31, Dec, 2019.

Answer:

A. Cows are biological assets that should be initially recognised at F.V less estimated point-of-sale costs.

B. The cows purchased during the year should be initially recognised at \$1,176  $[(20 \text{ cows} \times \$60) \times 98\%]$ .

This will give rise to an immediate expense recognition in P/L of \$24  $[(20 \times \$60) - \$1,176]$ .

Dr: Biological assets \$1,176 → F.V less estimated point-of-sale costs

Dr: Expenses \$24 → P/L

Cr: Cash \$1,200

C. At year-end the whole herd should be revalued to F.V less estimated point-of-sale costs. Any G/L will be recognised in P/L.

Biological assets at year-end =  $120 \times \$90 \times 98\% = \$10,584$ .

Carrying value at year-end = beginning balance \$10,000 + cost of purchases \$1,176 = \$11,176.

Loss recognised in P/L =  $\$11,176 - \$10,584 = \$592$ .

Dr: F.V loss \$592

Cr: Biological assets \$592

## 2/4. Presentation of biological assets

**1.** Biological assets should be presented in the SFP as a **separate class** of assets titled '**biological assets**' falling under *neither* current *nor* non-current classifications. This reflects the view of such assets as having an unlimited life on a collective basis.

**2.** Biological assets should be sub-classified (*either* on the face of the SFP *or* as a note to the F/S<sup>3</sup>) according to:

A. Class of **animal or plant**; *or*

B. Nature of activities; consumable *such as* sheep for meat *or* bearer *such as* sheep for wool; *or*

C. Maturity *or* immaturity for intended purpose. Mature **biological assets** are those that have attained **harvestable** specifications for consumable biological assets *or* are able to sustain regular **harvests** for bearer **biological assets**.

Assets	
<b>1. Biological assets</b>	
Mature herd	XX
Calves	XX
<b>2. Non-current assets</b>	
<b>3. Current assets</b>	

## 2/5. Plant-based-Bearer biological assets

(outside the scope of IAS # 41)

**1. Plant-based bearer biological assets** (bearer plants) include plantations trees *such as* vines for grape, rubber trees, tea bushes *and* oil palms. These plants are used solely to grow agricultural produce over several periods *and* are not in themselves consumed. They are usually scrapped at the end of their lives like any productive plant asset.

**2. A bearer plant** is a living plant that:

A. Is used in supply of agricultural produce for more than one period; *and*

B. Has a remote likelihood of being sold as agricultural produce *except for* incidental scrap sales.

**3. F.V** is not an appropriate measurement for **bearer plant biological** assets because their economic benefit comes from the agricultural produce they create similar to any productive asset. *Consequently* **bearer plants** are excluded from IAS # 41 scope *and* are accounted for under IAS # 16 'PPE' as **self-constructed assets** until the point where they capable of being used for its intended purpose. They are measured at **accumulated cost until maturity** *and* then become subject to depreciation *and* impairment charges. Revaluation model under IAS # 16 could also be applied.

**4. Any un-harvested agricultural produce** growing on a **bearer plant** *such as* fruits on trees are **biological asset** subject IAS # 41 *and* measured at **F.V** less estimated point-of-sale costs at point of harvest.

## 2/6. Land used in agricultural activities

Although land often forms an integral part of the agricultural activities but land is accounted for under IAS #16'PPE' or IAS # 40'Investment Property'.

**Illustrative example:** Assume total value of the entity's forest assets is \$30m comprising:

Freestanding consumable trees \$22.70m;

- Owned land under trees \$6m;

- Roads in forests \$1.30m.

**Required:** How the forest's assets would be classified and presented in the SFP?

**Answer:**

Assets	Amount
<b>Biological assets</b>	
Freestanding trees-consumable → IAS # 41 *	\$22.70m
<b>Non-current assets</b>	
Land	\$6m
Other tangible assets-roads in forests (depreciable)	\$1.30m
<b>Current assets</b>	

\* If the freestanding trees were **bearer plant** it would be included in non-current assets and measured under IAS #16.

## 3/1. Overview

**1. Agricultural produce** is *either* incapable of **biological** transformation *such as* fire wood *or* the transformation remain dormant *such as* stored grain.

**2. Agricultural produce** is recognised **at the point of harvest** as a **separate asset** (*When* detached from the **biological asset**). For example *when* eggs come out of chicken *or when* milk is extracted from cows.



## 3/2. Measurement and presentation of agricultural produce

### Initial measurement

Agricultural produce should be **initially** (at the point of harvest) measured at **F.V less estimated point-of-sale costs at point of harvest**; **G/L** on initial recognition is recognised in P/L.

### Presentation

Agricultural produce is **presented** separately in the SFP 'as inventory' if remained on hand at year-end.

**Illustrative example:** During the month the farm's bees **produced** honey, the **F.V less estimated point-of-sale costs at point of harvest** amounted to \$100,000.

Required: How the **agricultural produce** is recorded?

Answer: The honey is **initially measured at F.V less estimated point-of-sale costs at point of harvest**.

Dr: Inventory-agricultural produce \$100,000

Cr: **Gain** \$100,000 → P/L

**Note:** Measuring the **agricultural produce at F.V less estimated point-of-sale costs at point of harvest** is logical because **until harvest** the **agricultural produce** was valued at the same **measurement** attribute as part of the **biological asset** (Bees).

### **3/3. Accounting treatment of agricultural produce**

#### **following the point of harvest**

**1.** If agricultural produce is held unsold after harvest for any reason such as drying or cleaning beans then; initial recognition at F.V less estimated point-of-sale costs at point of harvest ends and this initial value is considered as its deemed cost for application of IAS # 2 'Inventories'. The held agricultural produce is measured from that point under 'lower of cost or NRV'.

**Illustrative example:** A Brazilian entity is considering the valuation of its harvested coffee beans.

In Brazil, Industry practice is to value the coffee beans at F.V less estimated point-of-sale costs.

**Required:** The entity wishes to adopt IAS # 41 but does not know what the impact will be on its inventory of coffee beans.

**Answer:** F.V less estimated point-of-sale costs measurement stops after the time of harvest and IAS # 2 'Inventories' applies after that date. Therefore the inventory will be measured at the lower of cost or NRV.

**2.** Subsequently if NRV of the agricultural produce held as inventory is lower than the initial cost then; impairment loss is recognised in P/L. Reversal is allowed.

**Note:** This will be rare because agricultural produce is usually sold or processed within a relatively short time.

**3.** If the entity's agribusiness uses the harvested agricultural produce in some processing activities within integrated agricultural/agribusiness operations; the additional cost is capitalised to inventory and the ending inventory is valued at lower of cost or NRV under IAS # 2. IAS # 41 does not deal with the processing of agricultural produce after harvest.

**4/1. Consistency of F.V less estimated point-of-sale costs measurement**  
**of biological assets**  
**and agricultural produce with conceptual framework**

IAS # 41 states that; **biological assets and agricultural produce** should be **measured** at **F.V less estimated point-of-sale costs**. It assumes that the **F.V** of a **biological asset or agricultural produce** can be **measured** reliably.

This presumption can only be rebutted for a **biological asset or agricultural produce** for which market prices are not available *and* the alternative **measures** of **F.V** are 'clearly unreliable'.

The **measurement** basis selected by IAS # 41 is one that is visualised in the Framework. *However* the Framework states that; the most common **measurement** basis used is **historical cost**. For this to be a basis to produce **relevant and reliable** financial information, the cost of the **asset** needs to be **determinable**.

For many **biological assets** *such as* newly born calves, the concept of 'cost' is **not** an easy one to apply *and so* **F.V** seems to be more appropriate.

## **5/1. Disclosures of biological assets and agricultural produce**

1. Aggregate **G/L** arising during the current period resulting from initial recognition of biological assets and from the changes in **F.V** less estimated point-of-sale costs;

IAS # 41 encourages companies to present separately in P/L:

A. Amount of **G/L** due to physical changes as a measure of agricultural activities performance; and

B. Amount of **G/L** due to price changes as a measure of market conditions.

**Exception:** No separate presentation is needed when production cycle is less than a year (for example; broiler chickens that is ready for sale after reaching the age of five weeks, mushroom growing and cereal crops). In such cases the total change in carrying amount is reported in of P/L as a single item.

2. A reconciliation of the carrying amounts of biological assets between the beginning and the end of the reporting period;

3. A quantified description of each group of biological assets, distinguishing between consumable and bearer biological assets or between mature and immature biological assets;

4. Methods and significant assumptions in determining **F.V**;

5. Description of the biological assets for which the cost model is used and depreciation method, useful lives and depreciation rates used, impairment losses, reversals of impairment losses and an explanation of why **F.V** can't be measured reliably;

6. Financial risk management strategies related to agricultural activity; because agricultural activity is often exposed to climatic, disease and other natural risks;

7. Restrictions on title, pledges, commitments in respect of biological asset.

## 6/1. Government grants

(1) G.G related to <b>biological assets</b> measured at cost less Acc. Dep and impairment <b>losses</b> .	(2) G.G related to biological assets measured at <b>F.V less estimated point-of-sale costs</b> .	
Is accounted for under IAS # 20 'Accounting for government grants and disclosure of government assistance'  for proper matching  i.e. it is <b>recognised</b> over time in a systematic and rational manner in proportion to the related expenses.	G.G is <b>accounted for</b> under IAS # 41 as follows:	
	(A)  <b>Unconditional G.G's</b>	(B)  <b>Conditional G.G's</b>
	The G.G is <b>recognised</b> as <b>other income</b> in P/L <b>when</b> it <b>becomes receivable</b> .	The G.G is initially <b>recognised</b> as <b>deferred income</b> <i>when</i> received. <i>When</i> the attached conditions are satisfied, the G.G is <b>recognised</b> as other income in P/L.

Thus; IAS # 20 recognition approach is based on **matching** while G.G's related to **biological assets** that are **measured** at **F.V less estimated point-of-sale costs** under IAS # 41 are **recognised** in P/L *when* conditions attached to G.G are satisfied.

*This means that* recognition of grants relating to PPE under IAS # 20 takes place over the life of the **asset** *rather than* *when* the relevant conditions are satisfied.

### Disclosures

- A. The **nature and extent** of G.G's **recognised** in the F/S's;
- B. **Unfulfilled conditions** and other contingencies attaching to received G.G's; *and*
- C. Significant decreases expected in the level of G.G's.



## 7/1. Practical cases

**Case study (1):** Dairy produces milk on its farms. It produces 25% of the country's milk that is consumed. Dairy owns 300 farms and has a stock of 210,000 cows and 105,000 heifers. The farms produce 10m K.G of milk a year and the average inventory held is 200,000 K.G of milk. However Dairy is currently holding stocks of 500,000 K.G of milk in powder form.

At 31, Oct, 2019 the herds are:

- 210,000 cows (3 years old) all purchased on or before 1, Nov, 2018;
- 75,000 heifers average age 1½ years purchased on 30, April, 2019;
- 30,000 heifers average age 2 years purchased on 1, Nov, 2018.

No animals were born or sold in the year.

The unit F.V less estimated point-of-sale costs was as follows:

Category	F.V less estimated point-of-sale costs
One year-old animal at 31, Oct, 2019.	\$32
Two years-old animal at 31, Oct, 2019.	45
1½ year-old animal at 31, Oct, 2019.	36
Three years-old animal at 31, Oct, 2019.	50
One year-old animal at 1, Nov, 2018 and 30, April, 2019.	30
Two years-old animal at 1, Nov, 2018.	40

Dairy has had problems during the year. Contaminated milk was sold to customers; as a result milk consumption has gone down. The government has decided to compensate farmers for potential loss in revenue from the sale of milk. This fact was published in the national press on 1, Sep, 2019. Dairy received an official letter on 10, Oct, 2019 stating that; \$6m would be paid to it on 2, Jan, 2020.

Dairy's business is spread over different parts of the country. The only region affected by the contamination was West Yorkshire where the government curtailed milk production in this region. The cattle were unaffected by the contamination and were healthy. Dairy estimates that; the future discounted cash flow from the cattle in the West Yorkshire amounted to \$3.40m after taking into account the government restriction order. Dairy feels that it can't measure the F.V of the cows in the region because of the problems created by the contamination. There are 60,000 cows and 20,000 heifers in the region. All these animals had been purchased on 1, Nov, 2018. A rival company had offered Dairy \$2.80m for these animals after point-of-sale costs and further offered \$6m for the farms themselves in that region. Dairy has no intention of selling the farms at present.

Dairy has been applying IAS # 41 before 1, Nov, 2018.

**Required:** How the biological assets and agricultural produce of Dairy should be accounted for under IAS # 41? Discuss the implications on the F/S<sup>5</sup>.

**Answer:** Biological assets are measured at the end of each reporting period at F.V less estimated point-of-sale costs unless F.V can't be measured reliably.

IAS # 41 encourages companies to separate the change in F.V less estimated point-of-sale costs between those changes due to physical reasons and those due to price (market conditions).

### 1. F.V of cattle:

As the cattle in the contaminated region are *healthy and* could be moved to another region *and* sold, *therefore* the calculation of *F.V* less estimated point-of-sale *costs* would include *total animals* in all regions.

<b>A reconciliation of the carrying amounts of biological assets between the beginning <i>and</i> the end of the reporting period</b>		
Description	Subtotal	Total
<b>F.V at 1, Nov, 2018</b>		
Cows-two years (210,000 × \$40)	\$8,400	
Heifers-one year (30,000 × \$30)	900	
<b>Purchases during the year</b>		
Heifers-one year (75,000 heifers × \$30)	2,250	
<b>Total</b>		<b>\$11,550</b>
<b>Increase <i>due to</i> physical change</b>		+
[210,000 × (\$50 - \$45)]	1,050	
[30,000 × (\$45 - \$32)]	300	
[75,000 × (\$36 - \$32)]	390	
<b>Total</b>		<b>1,740</b>
<b>Increase <i>due to</i> price change</b>		+
Cows-two years [210,000 × (\$45 - \$40)]	1,050	
Heifers-one year [30,000 × (\$32 - \$30)]	60	
Purchased Heifers-one year [75,000 × (\$32 - \$30)]	150	
<b>Total</b>		<b>1,260</b>
<b>F.V less estimated point-of-sale costs at 31, Oct, 2019</b>		=
(210,000 × \$50)	10,500	
(30,000 × \$45)	1,350	
(75,000 × \$36)	2,700	
<b>Total</b>		<b>14,550</b>

#### **Purchase of 75,000 heifers one year at 30, April, 2019:**

Dr: Biological assets (75,000 × \$30) = \$2,250

Cr: Cash \$2,250

#### **Recording price changes:**

Entry	Dr	Cr
Dr: Biological assets-cows [210,000 × (\$45 - \$40)] → <i>as if</i> being at the same age of two years	\$1,050	\$1,260
Dr: Biological assets -heifers [30,000 × (\$32 - \$30)] → <i>as if</i> being at the same age of one year	\$60	
Dr: Biological assets -cows [75,000 × (\$32 - \$30)] → <i>as if</i> being at the same age of one year	\$150	
Cr: Gain from price change		

**Recording Physical changes:**

Entry	Dr	Cr
Dr: <b>Biological assets-cows</b> [210,000 × (\$50 - \$45)] → Grown from two years to three years	\$1,050	
Dr: <b>Biological assets -heifers</b> [30,000 × (\$45 - \$32)] → Grown from one year to two years	\$390	
Dr: <b>Biological assets-cows</b> [75,000 × (\$36 - \$32)] → Grown from one year to 1½ years	\$300	
Cr: <b>Gain from physical change</b>		\$1,740

**2. West Yorkshire region-F.V of cattle:**

This region has an inventory of cattle of 60,000 cows *and* 20,000 heifers. **F.V** is difficult to ascertain because of the region's problems. *However* according to, IAS # 41 *if F.V* was used on **initial recognition then**; it should be **continued** to be used. The cattle in this region were valued at 1, Nov, 2018 at **F.V**. *Therefore* the cattle **must** be valued at **F.V less estimated point-of-sale costs** at 31, Oct, 2019. *Although* \$2.80m has been offered for these **animals**, this may be an **onerous contract** as rival companies are likely to wish to take advantage of the problems in this region. The future discounted income of \$3.40m is also **inappropriate** value *as the cattle* are healthy *and* could be moved to another region *and* sold.

The cattle in this region would *therefore* be valued at **F.V less estimated point-of-sale costs** at 31, Oct, 2019 as follows:

Description	Amount
(60,000 cows × \$50)	\$3,000
(20,000 heifers × \$45)	900
<b>Total</b>	<b>3,900</b>

**3. Additional points:**

A. The powdered milk inventory will be valued under IAS # 2 'Inventories' at the **lower** of cost *and* NRV. Because of the large amount of inventory, there may be an obsolescence *or* possible contamination which might result in, a reduction in the asset's value.

B. **Agricultural activities** that meet the criteria to be classified as held for sale should be **accounted for** using IFRS **Accounting Standard** # 5. The offer for the farms *and* cattle would **not** meet the criteria under IFRS **Accounting Standard** # 5 because Dairy has **no intention of selling** the farm at present. The carrying amount of the **assets** is **unlikely** to be **recovered principally through** a sale transaction.

C. **Unconditional G.G** should be **recognised** *when* the grant **become** receivable. The statement in the national press on 1, Sep, 2019 would **not** be sufficient to recognise the grant *but* the **official letter** of 10, Oct, 2019 would be sufficient. *Therefore* a debt to receivable-G.G of \$6m *and* a credit to **other income** would be **recognised** in the F/S<sup>s</sup> to 31, Oct, 2019.

**Case study (2):** Falcon's main activity is **agriculture**. Its **assets** consist of farmland on which sheep (for wool) *and* lambs (for food) are kept *and* bred. Falcon is also involved in forestry.

Details relating to its **assets** *and* their **F.V's** **less estimated point-of-sale costs** at 1, June 2019 *and* 31, May 2020 are as follows:

Description	F.V per unit	
	1, June, 2019	31, May, 2020
New born lamb	\$25	\$28
Sheep (wool) aged under five	100	105
Sheep (wool) aged over five	80	82
Sheep for lambing aged under six	120	110
<b>Biological assets-animals</b>	<b>Quantities</b>	
New born lamb-can be deemed to be born on 31, May, 2020	None	1,250
Sheep (wool) aged under five	2,000	1,800
Sheep (wool) aged over five	1,000	1,200
Sheep for lambing aged under six	1,500	1,500
<b>Forestry</b>	<b>F.V</b>	
40,000 hectares of land cost of \$500,000 in 1970)	\$720,000	\$740,000
Forest of 200,000 maple trees (planted in 1998)	450,000	475,000

- No mature sheep were born *or* sold during the year.

- Falcon has a policy of valuing its land on **revaluation model**.

- Falcon has a stock of **cut maple trees** at 31, May, 2020 that have F.V of \$280,000. These trees were **felled** in May, 2019 *and* recorded at their F.V of \$250,000.

- In March, 2020 Falcon passed a government inspection *and* became **eligible** to receive a government subsidy of \$320,000 aimed at companies using organic methods of farming. The grant is expected to be received in Sep, 2020.

**Required:** Prepare statement of P/L *and* OCI *and* SFP extracts for the year to 31, May, 2020 in respect of the above items.

**Answer:**

Statement of P/L <i>and</i> OCI extracts for the year-ended 31, May, 2020		
Description	Subtotal	Total
<b>Biological assets</b>		
<b>1. Animals</b>		
Gain on physical change (note 5)	\$30,400	
Loss from price change (note 5)	(3,000)	
Net gain on biological assets-animals during the year		27,400
<b>2. Forest-consumable</b>		
Gain on F.V increase in forest (\$475,000 - \$450,000) (note 3)		25,000
<b>3. Other income</b>		
G.G (note 4)		320,000
<b>OCI</b>		
Revaluation gain on land during the year (note 2)		20,000



Entry	Dr	Cr
Dr: Biological assets (1,250 × \$28)	\$35,000	
Cr: Biological assets [200 × (\$105 - \$82)]		\$4,600
Cr: Gain from physical change		<b>\$30,400</b>

#### Recording Price changes:

Entry	Dr	Cr
Dr: Biological assets [2,000 × (\$105 - \$100)]	\$10,000	
Dr: Biological assets [1,000 × (\$82 - \$80)]	\$2,000	
Dr: Loss on price change	<b>\$3,000</b>	
Cr: Biological assets [1,500 × (\$110 - \$120)]		\$15,000

SFP extracts at 31, May, 2020	
Description	Amount
<b>Assets</b>	
<b>Biological assets</b>	
1. Animals [(1,250 × \$28) + (1,800 × \$105) + (1,200 × \$82) + (1,500 × \$110)] (note 5)	\$487,400
2. Forest-consumable (note 3)	475,000
Total consumable biological assets	<b>967,400</b>
<b>Non-current assets</b>	
<b>PPE</b>	
Land-carried under revaluation model (note 2)	740,000
<b>Current assets</b>	
Inventory-cut trees @ lower of cost or NRV (note 1)	\$250,000
Receivables-G.G (note 4)	320,000
<b>Equity</b>	
Revaluation reserve; increase in F.V of land from \$500,000 to \$740,000 (note 2)	\$240,000

#### Notes:

1. Per IAS # 41 after harvest, inventories should be accounted for under IAS # 2 'Inventories'. Inventory is valued at the lower of cost or NRV. Thus; the increase in F.V of the cut trees from \$250,000 to \$280,000 is not recognised until they are sold.

2. Under IAS #16 'PPE' revaluation surplus on the land is recognised in equity (revaluation reserve). Thus; the increase in the land from \$500,000 in 1970 to \$740,000 on 31, May, 2020 is presented under revaluation reserve in equity section, of which \$20,000 are reported in OCI for this year.



3. The change in **F.V less estimated point-of-sale costs** of Forest is recognised in P/L, it is consumable plant based **biological asset** rather than bearer plant based **biological asset** because it will be felled when matured; accordingly it is measured under IAS # 41 at **F.V less estimated point-of-sale costs** and the change in **F.V less estimated point-of-sale costs** is recognised in P/L.

Note: If the forest trees are held to get fire wood or any **agriculture produce** without being cut, it would be subject to IAS # 16 and presented under PPE as a bearer plant biological asset.

4. G.G is recognised in P/L because Falcon passed a government inspection and became eligible to receive it.

Dr: Receivable-G.G \$320,000

Cr: Other income-G.G \$320,000

5. As no wool sheep have been bought or sold, 200 sheep under five must have become over five during the year because the total sheep's was 3,000 at the beginning of the year and at year-end.

Biological assets-animals	Quantities	
Sheep (wool) aged under five	2,000	1,800
Sheep (wool) aged over five	1,000	1,200
<b>Total</b>	<b>3,000</b>	<b>3,000</b>

F.V less estimated point-of-sale costs of animals			
Description	1, June, 2019	31, May, 2020	Difference
New born lamb (1250 × \$28)	\$0	\$35,000	\$35,000
Sheep (wool) aged under five (2,000 × \$100) and (1,800 × \$105)	200,000	189,000	(11,000)
Sheep (wool) aged over five (1,000 × \$80) and (1,200 × \$82)	80,000	98,400	18,400
Sheep for lambing aged under six (1,500 × \$120) and (1,500 × \$110)	180,000	165,000	(15,000)
<b>Total change in biological assets-animals</b>	<b>460,000</b>	<b>487,400</b>	<b>27,400</b>

The change in the carrying amount of \$27,400 of the **animals** is allocated between change attributable to differences in F.V change and physical change as follows:

Description	Amount
<b>Change in the carrying amount attributable to physical changes</b>	
New born lamb (1,250 × \$28)	35,000
Sheep (wool) were under five become over five [200 × (\$105 - \$82)]	(4,600)
<b>F.V gain attributable to physical change</b>	<b>30,400</b>
<b>Change in the carrying amount attributable to price changes</b>	
Sheep (wool) aged under five [2,000 × (\$105 - \$100)]	\$10,000
Sheep (wool) aged over five [1,000 × (\$82 - \$80)]	2,000
Sheep for lambing aged under six [1,500 × (\$110 - \$120)]	(15,000)
<b>F.V loss attributable to price change</b>	<b>(3,000)</b>
<b>Net gain in biological assets-animals</b>	<b>27,400</b>

**1/1. Examinable syllabus guide for**  
**DECEMBER 2024 TO JUNE 2025 according to ACCA**

**Employee benefits**

- Describe the nature of short term and long term employee benefits, termination benefits, defined contribution, and defined benefits plans.
- Explain the recognition and measurement of short term and long term employee benefits, termination benefits and defined contribution and defined benefit plans in the financial statements of contributing employers.
- Account for short term and long term employee benefits, termination benefits and defined contribution and defined benefit plans in the financial statements of contributing employers.

After studying our material and solving related questions, please refer back to the points above to make sure you fully cover it well

## 1/2. Overview

1. **Employee benefits**; 'include all forms of consideration given by an entity in exchange for services rendered by employees'.
2. **Employees** may be full-time *or* part-time, permanent, temporary *or* casual.
3. **Benefits** may be given under formal **plans** *or* agreements, legislative requirements, industry conventions *or* under informal practices which give rise to a constructive obligation.

### 1/3. Types of employee benefits

IAS #19 identifies four types of **employee benefits** as follows:

**1. Short-term employee benefits:** are those **monetary benefits** expected to be **settled** before twelve months after the end of the reporting period in which employees render the related services; it includes wages *and* Salaries, Social security **contributions**, Paid annual leave, Paid sick leave, Paid maternity/Paternity leave, Paid jury service, Paid military service, Vocational holiday benefit, Profit sharing, Bonus **plans**.

Also **short-term employee benefits** include **benefits in kind** *such as* medical care, housing, cars, free *or* subsidised goods...etc.

**2. Termination benefits:** are those **benefits** payable *when* employment being terminated **before** the normal retirement date *either* by the employer *or* by the employee accepting terms to have employment terminated *such as* severance pay, early retirement payments *and* redundancy payments.

**3. Post-employment benefits:** relates to retirement **benefits** *such as* **pension plans** (that represent the main focus of the standard), **postemployment medical care benefits**, **postemployment life insurance** *and* **post-employment death benefits** **paid** to employee's spouse *or/ and* dependants.

**4. Other long-term employee benefits:** include **benefits** not within the above classifications *such as* long-service leave, long-term disability benefits *and* sabbatical leave.

Notes:

A. **Benefits** may be paid to the employees themselves, to their dependants (spouses, children, etc...) *or* to third parties.

B. IAS # 19 addresses the **accounting for** all **employee benefits** **except** for share options *and* share appreciation rights.

## 2/1. Accounting for short-term employee benefits

Short term employee benefits are accounted for as any expense that is accrued over the accounting period.

1. **Wages and salaries** are accounted for as follows:

A. **Recognised** as an **expense** *when* employee services are rendered *unless* included within the cost of an asset *such as* finished goods inventory;

B. Unpaid short-term employee benefits at year-end are recognised as an accrued **expense**;

C. Any short-term benefits **paid in advance** are recognised as a **prepayment** (to the extent that it will lead to a reduction in future payments *or* refunded).

2. Short-term paid absences (**compensated absences**) *such as* holiday pay, sick leave, maternity leave, jury service, study leave *and* military service are accounted for as follows:

A. Short-term **accumulating** paid absences:

These are absences for which an employee is paid *and if* the employee's entitlement has not been used up at the end of the period they are **carried forward** to the next period. For examples paid holiday leave *where*; any unused holidays in one year are carried forward to the next year.

The cost of **accumulating** paid absences should be **measured** as the **additional amount** that the entity expects to pay as a result of the unused entitlement that has accumulated at the end of the reporting period *and recognised* as an employment **expense** *and* an **obligation** called (**compensated absences**) as the employees rendered service that increases their entitlement to future **compensated absences**.

**Conclusion:** Short-term paid absences that are accumulated are recognised *when* employee services are rendered.

**Illustrative example:** Youmni has 100 employees each is entitled to five working days of paid sick leave for each year *and* unused sick leave can be **carried forward** for one year. Sick leave is taken on a LIFO basis (i.e. first is taken out of the current year's entitlement *and then* out of any balance brought forward). At 31, Dec, 2019 the average unused entitlement is two days per employee. Youmni expects (based on past experience which is expected to continue) that 92 employees will take five days *or* less sick leave in 2020 the remaining eight employees will take an average of 6½ days each. Employees are paid \$200 per day.



**Required:** State the required **accounting** for sick leave.

**Answer:** Youmni expects to pay an additional 12 days (8 employee's  $\times 1\frac{1}{2}$  days) of sick pay as a result of the unused entitlement that has accumulated at 31, Dec, 2019. Youmni should recognise an **expense** and a **liability** equal to 12 days of sick pay.

**Dr:** Employment **expense** \$2,400 → P/L

**Cr:** Compensated absences payable (sick leave) \$2,400 → Current **liability**

#### B. Short-term **non-accumulating** paid absences

These are absences for which an employee is **paid** *when* absences occur *and* the **expense** is *then* recognised. *But* an entitlement to the absences **does not accumulate**. The employee can be absent *and* is paid *when* the circumstances arise. Examples are maternity / paternity pay, sick pay *and* paid absence for jury service.

*Thus*; Short-term **paid absences** that are **not** accumulated are **recognised** *when* absence occurs.

3. Compensations related to **profit sharing or bonus plans** payable within 12 months **after** the year-end should be **recognised** at the expected amount to be paid *when* the entity has a **present obligation** to pay it i.e. *when* the employer has no real option *but* to pay it. This will usually be *when* the employer **recognises** the profit *or* other performance achievement to which the profit share *or* bonus relates.

The measurement of the **constructive obligation** should reflect the possibility that some employees may leave without receiving a bonus.

**Illustrative example:** Oman runs a profit sharing plan under which it pays 3% of its **net profit** for the year to its employees *if* none have left during the coming year. Oman estimates that; this will be reduced by staff turnover to 2.50% in 2021.

**Required:** Which **costs** should be **recognised** by Oman for the profit share?

**Solution:** Oman should **recognise** a **liability** *and* an **expense** of 2.50% of net profit of 2020.

## 3/1. Accounting for termination benefits

1. **Termination benefits** are only those **benefits paid** when employment is terminated (rather than for employee's services rendered) either by compulsory redundancy or the employee accepting voluntary redundancy.

Thus, **benefits paid** by retirement or resignation are not termination benefits.

Note: Employee termination may also affect the entity's **pension or post-retirement plans through curtailment or amendment**. For example redundant employees will no longer accrue services with the entity thus, the **P.V of DBO** will be reduced.

2. **Termination benefits** are **accounted for differently** from **other employee benefits** because the event that gives rise to the entity's **obligation** to pay **termination benefits** is the **termination of the employment rather than** rendering of services by the employee. Thus, entitlement to such payments are **not accrued over time**

3. Such payments are normally in the form of a **lump sum** (redundancy or retrenchment pay). But it may include enhancement of **post-employment benefits** or payment of a salary until the end of a notice period 'called gardening leave'.

4. **Termination benefits** become available in a relatively short period **prior to** any such payment being agreed and paid to the employee. **Termination benefits** are **recognised** as an **expense and liability** at the **earlier of** the date at which the entity:

A. Can no longer withdraw the offer of the **termination benefits**;

- This date is **when the employee accepts the offer** in the case of voluntary redundancy or

- The date **when the entity has communicated the plan of termination to affected employees** in case of compulsory redundancy.

**B. Recognises costs** for a restructuring provision (Per IAS # 37) and the restructuring involves the payment of **termination benefits**.

5. The initial and subsequent measurement of the **termination benefits** depends on **when** those **benefits** are expected to be **settled**. If the **termination benefits** are expected to be **settled** before 12 months after the reporting date; apply requirements for **short term employee benefits**. Otherwise; apply requirements for **other long term employee benefits** i.e. **recognised** at its P.V.

6. In measuring **termination benefits**; the entity must distinguish between **termination benefits** (resulting from termination of employment) and enhancement of **post-employment benefits** (resulting from services provided). Any **benefits** related to enhancement of **post-employment benefits** should be **accounted** as such.

**Illustrative example:** As a result of recent acquisition; the entity plans to close a factory in ten months and at that time terminate the employment of the remaining employees at the factory. Because the entity needs the expertise of the employees at the factory to complete some contracts; it **announces a termination plan** such that each employee who stays and render services until the closure of the factory will **receive on termination date** a cash payment of \$30,000. Employees leaving before the closure of the factory will receive \$10,000.

There are 120 employees at the factory. At the time of announcing the plan; the entity expects 20 of them to leave before closure.

**Required:** Explain the accounting treatment of the proposed payment to the employees.

**Answer:** The total expected cash outflow under the plan are \$3.20m  $[(20 \text{ employees} \times \$10,000) + (100 \text{ employees} \times \$30,000)]$ . The entity must separately account for the amount paid as **termination benefits** and the amounts paid in return for the rendering of services by the employees.

**A. Termination benefits:**

The amount provided in exchange for termination in employment is \$10,000. This is the amount that the entity would have to pay for terminating the employment *regardless of whether* the employees stay and render services until closure or they leave before closure. *Even though* the employees can leave before closure; the termination of all employees' employment is a result of the entity's decision to close the factory and terminate their employment i.e. all employees will leave employment when the factory closes. Therefore the entity should recognise a **liability** of \$1.20m for the **termination benefits at the earlier or when** the plan of termination is announced and when the entity recognises the restructuring costs associated with the closure of the factory.

**B. Benefits provided in exchange of services:**

The incremental **benefits** that the employees will receive if they stay and provide services for the full ten-month period are in exchange for services provided over that period. They are **not termination benefits** as they are conditional on; the employees providing services over that period. Therefore the entity should account for these **benefits** as a **short term employee benefits**. Because the entity expects to settle them before 12 months after the end of the reporting period; discounting is not required so an expense of \$0.20m  $[(\$3.20m - \$1.20m)/10 \text{ months}]$  is recognised in each month during the service period of ten months with a corresponding increase in the carrying amount of the termination **liability** (current liability).



## 4/1. Accounting for Post-employment benefit plans-General

1. A **pension plan** or scheme (**post-employment benefit plan**) consists of a pool of **assets** together with a **liability** for **pension benefits** owed.

2. **Pension plan assets** normally consist of investments, cash *and* (sometimes) properties.

3. **Contributions** are the amount paid to the **plan assets**. (Dr: **Plan assets** Sxx Cr: Cash Sxx)

4. **Benefits** are the amount of **pensions** made from the plan to the eligible beneficiaries.

Dr: **Pension obligations** Sxx

Cr: **Plan assets** (cash) Sxx

5. **Benefits paid** to retired employees (**pensions**) are paid from the **contributions** received by **plan** fund *and* the return earned on the **plan assets**.

### 6. **Types of pension plans:**

A. **Defined contribution plans:** are **benefit plans** *where* the entity (employer) pays **fixed contributions** into a separate fund *and* the employer will have no legal *or* constructive obligation to pay further **contributions** *if* the fund does not hold sufficient assets to pay all **employee benefits**.

**Illustrative example:** Louisa Co. assumed the obligation to provide an **agreed level** of **contributions** to a fund manager entity. These **contributions** would be invested for the purpose of **pension benefit** payment. Louisa is **not** obligated to make up any shortfall in the fund's **assets**.

B. **Defined benefit plans:** are **benefit plans** *where* the **benefits** payable to the employees are based on formula that takes into account many factors *such as* employee age, length of service *and* compensation. Any shortage in **plan assets** must be compensated by the employer who is obligated to provide the **agreed amount of benefits** to eligible employees. *Thus;* the employer in **defined benefits scheme** retains both investment risk (i.e. **plan assets** invested will be insufficient to meet the **defined benefit obligation**) *and* actuarial risks (i.e. **Defined benefit obligation** will cost more than expected).

**Illustrative example:** Lora guarantees a particular level of **pension benefit** to its employees upon retirement. The **annual pension** that employees will receive is based on the following formula:

$$\text{Annual benefits} = \text{Salary at retirement} \times (\text{number of year's worked}/40 \text{ years}) \times 80\%$$

Because Lora has an **obligation** to pay additional funds into the **pension plan** *other than* annual **contributions** to meet the promised level of **pension benefits**; this **pension plan** is a **defined benefit plan**.

7. The **accounting for defined benefit plans** is more complex than **defined contributions plans**.

8. In determining *whether* the scheme is **accounted for** as a **defined contribution** *or* a **defined benefit plan**; the entity should consider not only its legal obligation *but also* its constructive obligation that arises from any informal practices.

**Illustrative example:** Morgan has a **defined contribution pension scheme**. However during the year, it introduced a new **post-employment plan** (the fund) for its employees as a way of enhancing the **benefits** they will receive *when* they retire. Morgan makes **monthly contributions** into the fund that are equal to a **set percentage of the salary cost**.

Upon retirement employees will receive **annual benefits** from the fund based on their number of years of service *and* their final salary. The fund is voluntary *and* Morgan can cancel it at any time.

Morgan has a history of paying employees **benefits** that are substantially above the national average with **annual increases** in excess of inflation. Morgan has won many accolades as a 'top employer' *and* received positive coverage from the national press *when* the fund was announced. The leadership team is well trusted by the employees.

**Required:** Determine from above facts *whether* the fund is a **defined benefit plan** or a **defined contribution plan**.

**Answer:** Although the fund is voluntary *and* can be cancelled; Morgan has a history of remunerating its employees above the national average as well as a strong reputation as a good *and* honest employer. Morgan *therefore* has a **constructive obligation** to continue with the fund *and* to ensure that; its level of **assets** is sufficient. As a result of the above; the fund should be **accounted for** as a **defined benefit plan**. *Therefore* Morgan has a **constructive obligation** to compensate for any insufficient **assets** in the fund particularly *if* final salaries *or* life expectancy rise substantially. *Thus*; Morgan bears **investment and actuarial risk** of paying the **benefits** to the retired employees.

9. Pension plans could be **contributory** *where* employees *and* employer contribute to the plan *or* **non-contributory** *where* only the employer contributes to the plan.

10. The pension plan must have a **separate fund** from the rest of the entity's **assets** to which **contributions** are paid *and* invested for the fund own purposes. The fund **assets** *and* investment returns should **not** be comingled with the entity's other resources *but* the fund **assets** are used to pay employees **benefits**.

11. Multiemployer plan; could be *either* a **defined contribution** *or* a **defined benefit plan** that pools the **assets contributed** by various entities that are **not** under common control *and* uses those **assets** to provide **benefits** to employees of more than one entity.

**Illustrative example:** Zena contributes to an **Industrial pension plan** that provides a **pension arrangement** for its employees. Many of the industry members contribute to that industrial **pension plan**; Zena makes **contributions** in respect of each employee. These **contributions** are kept separate from Zena's **assets** *and* are used together with any investment income to purchase annuities for retired employees. The **only obligation** of Zena is to pay the **annual contributions**. This **pension scheme** is a:

A. Multiemployer plan *and* a **defined contribution scheme**.

B. Multiemployer plan *and* a **defined benefit scheme**.

C. **Defined contribution plan** only.

D. **Defined benefit plan** only.

**Answer (A)** is correct.



### 5/1. Accounting for Defined Contribution Plans

1. The **pension** ultimately received by an employee is a function of; the **contributions** that have been made by the employer *and* the investment performance of the fund's **assets**.
2. The **pension cost** to the employer is **fixed and predictable** because the employer has no legal *or* constructive obligation to meet any **shortfall** in **plan assets**. *Thus*; there are no **actuarial** assumptions required to **measure** the **obligation or expense** *and* there are no **actuarial G/L**.
3. In such **plans**; the investment *and* **actuarial risks** rest with the employee.
4. The entity should charge the agreed **pension contribution** to P/L as an **employment expense** in each period (*unless* the relevant labor costs are capitalised).
5. Any **contributions paid in advance or arrears** (accruals) are reflected as **prepayments or accruals** respectively.
6. *If* **contributions** are to be paid **after** 12 months of the reporting period; the payments should be **discounted** in **calculating** the **expense** *and* the **liability** at the end of the reporting period.

**Illustrative example:** Harris makes **contributions** to a pension fund of employees at a rate of 5% of gross salaries. For convenience; Harris pays \$12,000 per month into the **pension scheme** with any balance being paid in the first month of the following accounting year. The wages *and* salaries for 2019 are \$3m.

**Required:** Calculate the **pension expense** for 2019 *and* the accrual/ prepayment at the year-end.

**Answer:** This appears to be a **defined contribution scheme**.

**Employment expense** =  $\$3m \times 5\% = \$150,000$ .

**Contributions** paid to the pension fund during the year =  $\$12,000 \times 12 \text{ months} = \$144,000$ .

Harris SFP will show **contributions payable** of  $\$150,000 - \$144,000 = \$6,000$ .

Harris records	Pension fund records
Dr: Employment <b>expense</b> \$150,000	Dr: Plan assets-cash \$144,000
Cr: Cash \$144,000	Dr: <b>Contributions</b> receivable \$6,000
Cr: <b>Contributions</b> payable \$6,000	Cr: Pension <b>obligation</b> \$150,000

**Note:** The **Pension obligation** is reduced by any **benefits** made to employees in the period.

7. **Required disclosure** in the employer's F/S<sup>2</sup>:

A. A description of the **defined contribution plan**; *and*

B. The amount recognised as an **expense** in the period.

## 6/1. Introduction

1. The **assets and liabilities** of **defined benefit pension plan** should not be comingled with the other **assets and liabilities** of the employer. **Defined benefit pension plans** require the entity to setup a **separate fund** to which it will usually have a **liability** in its F/S<sup>s</sup> (called **defined benefit obligation 'DBO'**). **Contributions paid** into the fund reduce the employer's **liability**. This is called **funded pension plan**.

2. The following case study explains the steps to be applied in **accounting for the defined benefit plan**.

**Note:** *Although* double entry approach is not required in the exam *but* it will facilitate understanding the accounting procedures followed.

**Illustrative example (1):** The following is the relevant information of Sincere's **defined benefit pension plan**:

Description	Year-ended 31, Dec		
	Year (1)	Year (2)	Year (3)
<b>Contributions paid</b> at year-end	<b>\$400</b>	<b>\$410</b>	<b>\$430</b>
<b>Benefits paid</b> at year-end	<b>220</b>	<b>230</b>	<b>240</b>
<b>P.V of DBO</b> at year-end	<b>3,300</b>	<b>3,500</b>	<b>3,600</b>
<b>Discount rate</b> at the <b>start</b> of the year	8%	8%	9%
<b>F.V of plan assets</b> at year-end	<b>\$4,000</b>	<b>\$3,800</b>	<b>\$3,900</b>
Expected rate of return on <b>plan assets</b> at the <b>start</b> of the year	10%	11%	10.50%
<b>Current service cost</b> for the year	<b>300</b>	<b>320</b>	<b>345</b>

**Other information:**

A. **F.V of plan assets** at the **beginning** of year (1) **\$3,200**;

B. **P.V of DBO** at the **beginning** of year (1) **\$2,700**;

C. **Cumulative actuarial gains** at the **beginning** of year (1) were **\$150**.

**Required:** Calculate the amounts that have to be included in the SFP *and* the statement of P/L *and* OCI for years (1) *through* (3).

Assume that; all **contributions and benefits** payments occur at the year-end to simplify the interest **calculations**.

**Answer:** Steps to be followed in **accounting for defined benefit plan** are as follows:

## 6/2. Recognition

**Step (1): Recording contributions received by the plan from the employer:**

Description	Entry	Year (1)		Year (2)		Year (3)	
		Dr	Cr	Dr	Cr	Dr	Cr
Contributions received from employer	Dr: Plan assets Cr: Cash	\$400		\$410		\$430	
			\$400		\$410		\$430

Notes:

1. The cash account credited above is the **employer's cash** *rather than* the cash related to the **plan assets**.
2. **Contributions** into the plan are the cash payments paid into the plan during the reporting period by the employer.
3. **Plan assets** increases by **contributions** received from the employer *and* credited for **benefits paid** to the retired employees.
4. The **plan assets** include **contributions** received from the employer *and* investments **specifically** related to the **plan** fund (financial *and* tangible properties) that will generate returns that help payment of employee's **benefits**.
5. **Plan assets** must be:
  - A. Measured at F.V as per IFRS **Accounting Standard** #13 'F.V Measurement'
  - B. IAS #19 does not prescribe a maximum time interval between **plan assets** valuations. *However* valuations should be carried out with **sufficient regularity** to ensure that; the reported amounts of the **plan assets** are **not** materially different from its **F.V**<sup>s</sup> at the reporting date.

**Example:** Which of the following **assets** should be **included** within the valuation of **plan assets** to F.V?

- A. Unpaid **contributions**.
- B. Unlisted corporate bonds that is redeemable *but not* transferable *without* the entity's permission.
- C. A loan to the entity that **can't** be assigned to a third party.
- D. Investments in listed companies.

Answer (A) is incorrect. *Where* there are unpaid **contributions** at the reporting date; these are **not** included in the **plan assets**. Unpaid **contributions** are treated as a **liability** owed by the entity/employer to the **plan**.

Answer (B) is incorrect. Valuation of unlisted securities carries a great deal of subjectivity.

Answer (C) is incorrect. A loan to the entity that **can't** be assigned to a third party is a **liability** on the entity that is **not** assignable to a third party.

Answer (D) is correct.

6. **Plan assets** should be separated from the employer's activities *and* held by a **legally separate fund** to be **solely used** for employee benefit payments. *Thus*, **plan assets** are not available to the employer's creditors *and not* returnable to the employer *unless* the remaining **plan assets** are sufficient to meet all plan obligations *or* to reimburse the employer for **benefits** already paid on behalf of the plan.

**Example:** Lisa has decided to **protect** its **Pension obligation** with an insurance policy. The insurance policy permits Lisa to collect the cash in the insurance policy.

**Required:** Is this insurance policy a qualifying plan asset?

**Answer:** This insurance policy is **not** a qualifying plan asset because the insurance policy permits Lisa (*rather than* the plan) to collect the amount of the insurance policy. *Thus*, proceeds from that insurance policy may be used for purposes *other than* payments of **employee benefits**.

**Step (2): Recording benefits paid by the plan to the employees:**

Description	Entry	Year (1)		Year (2)		Year (3)	
		Dr	Cr	Dr	Cr	Dr	Cr
Benefits paid by the plan to employees	Dr: DBO	\$220		\$230		\$240	
	Cr: Plan assets		\$220		\$230		\$240

1. **Benefits paid** are the amounts paid out of the **plan assets** to retired employees during the period.

**Ex:** An entity operates a **defined benefit plan** that pays employees an annual benefit based on their number of years of service. The annual payment does allow the employer to vary the final benefit. Over the last five years the entity has used this flexibility to increase employees' **pensions** by the current growth in EPS. How will employees' **benefits** be calculated if they retired in the current period?

- A. It will be based on the existing plan rules with **no** additional award.
- B. It will be based on the existing plan rules **plus** the current growth rate of EPS.
- C. It will be based on the plan rules **plus** the current rate of inflation.
- D. It will be based on the plan rules **plus** the increase in EPS anticipated over the remaining working lives of the employees.

**Answer (B) is correct.**

2. **Benefits paid** reduce **defined benefit obligation (DBO)** *and* the **plan assets**.

3. DBO is a **long term liability**.

4. The **DBO** balance at each year-end is an **actuarial estimate** of the **P.V** of employees **benefits** earned to date.

This estimate is based on:

- A. The benefit plan **formula**;
- B. **Demographic assumptions** *such as* mortality rates before *and* after retirement, employee turnover rate... etc;
- C. **Financial assumptions** *such as* the salaries rate of increase, promotion, inflation rate *and* the rate of increase in pension payments after retirement.

5. The **actuarial** assumptions used to calculate the **P.V** of the **DBO** at each year-end must reflect the **current market expectations** about the periods *when* the **pension benefits** will be paid *and* must be **mutually compatible** *and* *neither* too optimistic *nor* too conservative.

6. **Discounting** of **DBO** is necessary because it will be **settled** many years in the future *and therefore* the effect of the time value of money is **material**. The discount rate used should be determined by **market yields on high quality corporate bonds**.

7. The **actuarial** estimate of the **DBO** at each year-end is **calculated** using the **Projected Unit Credit Method**.



**Step (3): Calculating interest cost on DBO:**

1. The discount rate used to calculate the **P.V** of the **DBO** (market yields on high quality corporate bonds) is the same rate used to unwind the discount on **DBO**.

2. **Interest cost** = **beginning P.V** balance of the **DBO** × Interest rate on high quality corporate bonds at the **start** of the year.

3. **Interest cost** on beginning balance of **DBO** is an **imputed cost** caused by the 'unwinding' of the discounting process (i.e. the **DBO** is one year closer to **settlement**).

Description	Year (1)	Year (2)	Year (3)
Beg balance of DBO	\$2,700	\$3,300	\$3,500
(×) Beginning interest rate	8%	8%	9%
<b>Interest cost on DBO</b>	<b>216</b>	<b>264</b>	<b>315</b>

4. **Interest cost** on beginning balance of **DBO** is a component of periodic **pension expense** that increases **P.V** of **DBO**.

**Step (4): Calculating expected return on plan assets:**

1. **Expected return on plan assets** = (Beginning **F.V** balance of plan assets × Expected rate of return at the **start** of the year) - Expected plan administrative costs.

Description	Year (1)	Year (2)	Year (3)
Beg balance of plan assets	\$3,200	\$4,000	\$3,800
(×) Beginning expected rate of return	10%	11%	10.50%
<b>Expected return on plan assets</b>	<b>320</b>	<b>440</b>	<b>399</b>

2. **Expected plan administrative costs** should be deducted in arriving at the amount of the **expected return on plan assets**.

3. **Expected return on plan assets** on beginning **F.V** balance of the **plan assets** increases **carrying value of plan assets** and reduces periodic **pension expense**.

**Step (5): Calculating pension expense:**

The components of **pension expense** are as follows:

Description	Year (1)	Year (2)	Year (3)
Current service cost Dr: Pension Exp SXX Cr: DBO SXX	\$300	\$320	\$345
Add: Past service cost (see later) Dr: Pension Exp SXX Cr: DBO SXX	0	0	0
Add: <b>Interest cost</b> on DBO (step 3 above) Dr: Pension Exp SXX Cr: DBO SXX	<b>216</b>	<b>264</b>	<b>315</b>
Less: <b>Expected return on plan assets</b> (step 4 above) Dr: Plan assets SXX Cr: Pension Exp SXX	(320)	(440)	(399)
Add or less: The effect of any <b>curtailments or settlements</b> (see later)	0	0	0
<b>Pension expense</b>	<b>196</b>	<b>144</b>	<b>261</b>



Notes:

1. Net **interest** component = **interest cost** on beginning balance of **DBO** - **expected return** on beginning balance of **plan assets**.

Description	Year (1)	Year (2)	Year (3)
Add: <b>Interest cost</b> on DBO (step 3 above)	\$216	\$264	\$315
Less: <b>Expected return</b> on plan assets (step 4 above)	(320)	(440)	(399)
Net <b>interest</b> component	(104)	(176)	(84)

2. **Pension expense** is an operating **expense** that is recognised in P/L and credited to **DBO**.

3. **Plan amendments** can increase or decrease **pension expense** (see later). **Pension expense** could be (Cr) if **plan amendments results in substantial decline in DBO** (see later).

4. **Current service cost** represents the increase in the **P.V** of the **DBO** arising from employee services in the current period.

Note: IAS #19 requires that; **current service cost** must be recognised as a component of **pension expense** even if employee's rights to **pension benefits** are not yet vested. For example a plan may specify that: 'a member who leaves within the first five years of membership forfeits his or her rights to **pension benefits** under the plan'. IAS # 19 requires the benefit attributable to the first five years to be provided for during these years.

Note: the actuary may reduce the amounts recognised as a component of **pension expense** based on an actuarial estimate of the probability of leaving before vesting period.

♦ **Vested benefits** are **postemployment benefits** that are earned by the employee and are not contingent upon the employee's continued service.

5. **Past service cost** is the increase in the **P.V** of **DBO** resulting from **plan amendments** that enhances employee benefits on services rendered in prior periods. The additional benefits related to **past service cost** are **immediately recognised** in P/L as a component of **pension expense** regardless of whether these **benefits** are vested or not.

♦ **Past service cost** = **P.V** of the **DBO** after plan amendment - **P.V** of the **DBO** before plan amendment.

6. **Interest cost** is the imputed increase during the period in the **P.V** of **DBO** due to passage of time.

7. **Expected return** on **plan assets** include **expected interest**, dividends and other revenue to be received by the fund from investments of **plan assets** less expected administrative costs of the **plan assets**.

♦ The actual return on **plan assets** is different from the **expected return** on **plan assets**; **expected return** on **plan assets** is recognised in P/L as a reduction in **pension expense** while the difference between **expected** and actual return on **plan assets** is reflected in actuarial **G/L** on **plan assets** (Step 7).

**Step (6): Recording pension expense:**

Description	Entry	Year (1)		Year (2)		Year (3)	
		Dr	Cr	Dr	Cr	Dr	Cr
Recording recognised pension expense	Dr: Pension expense-P/L	\$196		\$144		\$261	
	Cr: DBO		\$196		\$144		\$261

**Step (7): Calculating actuarial G/L on plan assets:**

1. If the **F.V** of the **plan assets** at year-end exceeded the **carrying value** of the **plan assets** at year-end then; **actuarial gain** will results and vice versa.

2. Actuarial G/L on plan assets is determined as follows:

Description	Year (1)	Year (2)	Year (3)
Beg balance of plan assets at F.V (given)	\$3,200	\$4,000	\$3,800
Add: Contributions to the plan	400	410	430
Less: Benefits paid to employees	(220)	(230)	(240)
Add: Expected return on plan assets	320	440	399
Carrying value of the plan assets at year-end	3,700	4,620	4,389
Actuarial G/L	300 Gain	820 Loss	489 Loss
Ending balance of plan assets at F.V (given)	\$4,000	\$3,800	\$3,900

3. Actuarial gains/losses on plan assets are the difference between the carrying value and F.V of the plan assets at year-end. This difference results because the actual return on plan assets would normally differ from the expected return (that used to calculate the carrying value of the plan assets).

4. Actuarial gain on plan assets increases carrying value of the plan assets while actuarial loss on plan assets decreases its carrying value.

Note: The Beg F.V of plan assets balance would be \$nil if the pension scheme is newly introduced.

5. The actual return on plan assets can be determined as follows:

Description	Year (1)	Year (2)	Year (3)
Ending balance of plan assets at F.V	\$4,000	\$3,800	\$3,900
Less: Contributions to the plan	(400)	(410)	(430)
Add: Benefits paid to employees	220	230	240
Less: Beg balance of plan assets at F.V	(3,200)	(4,000)	(3,800)
Actual return on plan assets	620 G	(380) L	(90) L

Note: the actual return on plan assets can be analysed as follows:

Description	Year (1)	Year (2)	Year (3)
Expected return on plan assets	320	440	399
Plus: actuarial gain or minus actuarial loss on plan assets	300 G	(820) L	(489) L
Actual return on plan assets	620	(380)	(90)

**Step (8): Recording actuarial G/L on plan assets:**

Description	Entry	Year (1)		Year (2)		Year (3)	
		Dr	Cr	Dr	Cr	Dr	Cr
Recording actuarial gain on plan assets	Dr: Plan assets	\$300		-		-	
	Cr: Actuarial gain on plan assets		\$300		-		-
Recording actuarial loss on plan assets	Dr: Actuarial loss on plan assets	-		\$820		\$489	
	Cr: Plan assets		-		\$820		\$489

**Step (9): Calculating actuarial G/L on DBO:**

1. If the P.V of the DBO at year-end exceeded its carrying value; then actuarial loss will results and vice versa.

2. Actuarial G/L on DBO is determined as follows:

Description	Year (1)	Year (2)	Year (3)
Beg balance of <b>DBO</b> at P.V (given)	<b>\$2,700</b>	<b>\$3,300</b>	<b>\$3,500</b>
Add: Current service cost	300	320	345
Add: Past service cost	0	0	0
Add: Interest on <b>DBO</b>	<b>216</b>	<b>264</b>	<b>315</b>
Less: <b>Benefits paid</b> during the year	(220)	(230)	(240)
Carrying value of the <b>DBO</b> at year-end	<b>2,996</b>	<b>3,654</b>	<b>3,920</b>
Actuarial G/L	<b>304 Loss</b>	<b>154 Gain</b>	<b>320 Gain</b>
Ending balance of <b>DBO</b> at P.V (given)	<b>3,300</b>	<b>3,500</b>	<b>3,600</b>

3. Actuarial G/L on **DBO** is the difference between the carrying value *and* **P.V** of the **DBO** at year-end. This difference results because the **P.V** of **DBO** is based on actuarial assumptions *such as*: life expectancy, future expected salary increases, future employee turnover, mortality rates...etc. these assumptions always change year-over-year.

Ex: Which of these events will cause a change in the **P.V** of **DBO** at year-end?

A. Changes in mortality rates *or* the proportion of employees taking early retirement.

B. Changes in the estimated salaries *or* benefits that will occur in the future.

C. Changes in the estimated employee turnover.

D. Changes in the discount rate used to calculate **P.V** of **DBO**.

E. All of the above.

Answer (E) is correct

Note: The Beg **P.V** of **DBO** balance would be \$nil *if* the **pension scheme** is newly introduced.

#### Step (10): Recording actuarial G/L on **DBO**:

Description	Entry	Year (1)		Year (2)		Year (3)	
		Dr	Cr	Dr	Cr	Dr	Cr
Recording actuarial loss on <b>DBO</b>	Dr: Actuarial loss on <b>DBO</b> Cr: <b>DBO</b>	\$304		-		-	
			\$304		-		-
Recording actuarial gain on <b>DBO</b>	Dr: <b>DBO</b> Cr: Actuarial gain on <b>DBO</b>	-		\$154		\$320	
			-		\$154		\$320

#### Step (11): Netting actuarial G/L on plan assets *and* **DBO**:

Description	Year (1)	Year (2)	Year (3)
Actuarial G/L on plan assets	<b>\$300 G</b>	<b>\$820 L</b>	<b>\$489 L</b>
Actuarial G/L on <b>DBO</b>	<b>304 L</b>	<b>154 G</b>	<b>320 G</b>
<b>OCI</b> -Re-measurement loss	<b>4 L</b>	<b>666 L</b>	<b>169 L</b>

Net annual actuarial G/L is recognised on **OCI** for the year as a re-measurement G/L as follows:

Description	Entry	Year (1)		Year (2)		Year (3)	
		Dr	Cr	Dr	Cr	Dr	Cr
Closing actuarial G/L on OCI	Dr: Actuarial gain	\$300		\$154		\$320	
	Dr: <b>OCI</b> -re-measurement loss	\$4		\$666		\$169	
	Cr: Actuarial loss		\$304		\$820		\$489

Calculation of re-measurement G/L under one step approach

Description	Year (1)	Year (2)	Year (3)
Beg net asset position	\$500	\$700	\$300
Increased by: Employer contributions to the plan	400	410	430
Increased by: Expected return on plan assets	320	440	399
Reduced by: Current service cost	(300)	(320)	(345)
Reduced by: Interest on DBO	(216)	(264)	(315)
Carrying value of ending net asset position	704	966	469
Actuarial gain or (loss)	(4)	(666)	(169)
Ending net asset position	700	300	300

Note: Benefits paid has zero effect in net pension asset or liability position. So it is not included above.

6/3. Presentation**A. SFP**

Reported amounts on SFP are as follows:

1. Year-end P.V balance of the DBO is **offset** against the F.V balance of plan assets. The net position is presented as a **non-current** as follows:

A. If the P.V of DBO at year-end is higher than the F.V of plan assets; there is a plan **deficit** that is presented as non-current liability.

B. If the P.V of DBO at year-end is lower than the F.V of plan assets; there is a plan **surplus** that is presented as non-current asset.

Description	Year (1)	Year (2)	Year (3)
F.V of plan assets at the year-end	\$4,000	\$3,800	\$3,900
P.V of plan liabilities at year-end	3,300	3,500	3,600
Net surplus-non-current assets	700	300	300

Note:

A. When the F.V of the plan assets at year-end exceeds the P.V of DBO the net assets position presented in the SFP should not exceed its recoverable amount which is the **lower** of:

- The figure as calculated above; or
- If the plan is overfunded; the total of the P.V of any refunds expected from the plan plus any reductions in future contributions to the plan because of this surplus.

Thus; the **asset ceiling test** is applied to restrict the reported net plan assets to the expected future benefits in the form of refunds and/or reduced future contributions.

B. IAS #19 does not specify where in the SFP; the net plan asset or liability position should be presented. The manner of presentation is left to the judgment of the reporting entity.

C. It is not necessary to split plan assets and liabilities between current and non-current categories.

D. Net assets and liabilities from different plans should not be offset against each other unless the employer can legally use a surplus on one plan to meet the obligations on another and intends to settle the obligations in this way or to realise the surplus in one plan and settle the obligation of the other at the same time.

Ex: Bora has several pension plans covering various classes of employees. When Bora can present the net assets and liabilities of the various plans?

- A. Assets and liabilities of various plans may always be netted.
- B. Assets and liabilities of various plans may be netted when there is a legally enforceable right to use the assets of one plan to settle the obligations of another plan.
- C. When the estimated cash inflows and outflows are similar in pattern.
- D. When the assets and liabilities of various plans are both financial.

Answer (B) is correct: because assets and liabilities may be netted only when there is a legally enforceable right to use the assets of one plan to settle the obligations of another plan and intends to settle the obligations in this way or to realise the surplus in one plan and settle the obligation of the other at the same time.



2. The balance of **cumulative** actuarial G/L is presented within the equity section at year-end as follows:

Description	Year (1)	Year (2)	Year (3)
<b>Cumulative</b> beginning actuarial G/L balance	<b>\$150 G</b>	<b>\$146 G</b>	<b>\$520 L</b>
Net actuarial G/L recognised on OCI for the year (re-measurement G/L)	<b>4 L</b>	<b>666 L</b>	<b>169 L</b>
Year-end AOCI-re-measurement G/L (equity)	<b>146 Cr</b>	<b>520 Dr</b>	<b>689 Dr</b>

Note: According to IAS #19 (R), **cumulative** actuarial re-measurement G/L is **not** reclassified to P/L *although* it may be transferred **within** equity.

### **B. Statement of P/L and OCI**

Reported amounts on P/L and OCI are as follows:

Description	Year (1)	Year (2)	Year (3)
<b>Operating expenses</b>			
Net Pension expense	<b>\$196</b>	<b>\$144</b>	<b>\$261</b>
<b>OCI</b>			
Re-measurement G/L	<b>4 L</b>	<b>666 L</b>	<b>169 L</b>
Total charge to CI	<b>200</b>	<b>810</b>	<b>430</b>

Note: IAS #19 does not say how the components of pension expense are to be displayed in P/L.

### **C. Reconciliation disclosure**

The entity should disclose separate reconciliation for the **P.V** of **DBO** and the **F.V** of **plan** assets showing the movement between the opening and closing balances as follows:

Description	Year (1)	Year (2)	Year (3)
Opening net plan assets	<b>\$500</b>	<b>\$700</b>	<b>\$300</b>
Less: Pension expense and OCI	<b>(200)</b>	<b>(810)</b>	<b>(430)</b>
Add: Employer contributions to the plan	<b>400</b>	<b>410</b>	<b>430</b>
Closing net plan asset position	<b>700</b>	<b>300</b>	<b>300</b>

Note: Because **Benefits paid** reduce both **plan assets** and **DBO**; it has **Smil** effect on net plan asset or liability position.

**Illustrative example (2):** The following information relates to a **defined benefit plan** operated by Anglo. At 1, Jan, 2017 the **P.V** of the **DBO** was \$1m and the **F.V** of the **plan** assets amounted to \$0.90m.

Description	Year-ended 31, Dec		
	2017	2018	2019
Contributions paid by employer	<b>\$90</b>	<b>\$95</b>	<b>\$105</b>
Benefits paid to employees	<b>150</b>	<b>155</b>	<b>160</b>
<b>P.V</b> of DBO at 31, Dec	<b>1,350</b>	<b>1,340</b>	<b>1,450</b>
Discount rate at the start of the year	10%	9%	8%
<b>F.V</b> of plan assets at end of year	<b>1,200</b>	<b>1,150</b>	<b>1,300</b>
Expected rate of return on plan assets at the start of the year	10%	9%	8%
Current and past service cost for the year	<b>125</b>	<b>130</b>	<b>138</b>

Assume **contributions** received from employer and **benefits paid** by the plan occurred at each year-end

Required: Show how the **defined benefit plan** would be shown in Anglo's F/S<sup>3</sup> for each of the years-ended 31, Dec, 2017, 2018 and 2019 assuming the balance of **actuarial loss** at 31, Dec, 2016 was \$100

Answer:

#### A. Recognition:

Step (1): Recording **contributions received** by the plan from the employer:

Description	Entry	2017		2018		2019	
		Dr	Cr	Dr	Cr	Dr	Cr
Contributions received from employer	Dr: Plan assets Cr: Cash	\$90	\$90	\$95	\$95	\$105	\$105

Step (2): Recording **benefits paid** by the plan to the employees:

Description	Entry	2017		2018		2019	
		Dr	Cr	Dr	Cr	Dr	Cr
Benefits paid by the plan to employees	Dr: DBO Cr: Plan assets	\$150	\$150	\$155	\$155	\$160	\$160

Step (3): Calculating **interest cost** on DBO:

1. **Interest cost** = beginning P.V balance of the DBO × interest rate at the **start** of the year:

Description	2017	2018	2019
Beg balance of DBO	\$1,000	\$1,350	\$1,340
(×) Beg interest rate	10%	9%	8%
<b>Interest cost on DBO</b>	<b>100</b>	<b>121.50</b>	<b>107.20</b>

2. **Interest cost** on beginning balance of DBO is a component of periodic **pension expense** that increases carrying value of DBO.

Step (4): Calculating **expected return** on plan assets:

1. **Expected return** on **plan assets** = (beginning F.V balance of **plan assets** × expected rate of return at the **start** of the year) - expected **plan administrative costs**.

Description	2017	2018	2019
Beg balance of plan assets	\$900	\$1,200	\$1,150
(×) Beg expected rate of return	10%	9%	8%
<b>Expected return on plan assets</b>	<b>90</b>	<b>108</b>	<b>92</b>

2. **Expected return** on **plan assets** is a component of periodic **pension expense** that increases **carrying value** of **plan assets** and reduces periodic **pension expense**.

Step (5): Calculating **pension expense**:

Description	2017	2018	2019
Current and past service cost	\$125	\$130	\$138
Add: <b>Interest cost</b> on DBO (step 3 above)	<b>100</b>	<b>121.50</b>	<b>107.20</b>
Less: <b>Expected return</b> on plan assets (step 4 above)	<b>(90)</b>	<b>(108)</b>	<b>(92)</b>
<b>pension expense</b>	<b>135</b>	<b>143.50</b>	<b>153.20</b>

**Pension expense** is an operating **expense** that is recognised in P/L and credited to **DBO**.

Step (6): Recording pension expense:

Description	Entry	2017		2018		2019	
		Dr	Cr	Dr	Cr	Dr	Cr
Recording recognised pension expense	Dr: Pension expense-P/L Cr: DBO	\$135	\$135	\$143.50	\$143.50	\$153.20	\$153.20

Step (7): Calculating actuarial G/L on plan assets:

Description	2017	2018	2019
F.V of the Beg plan assets balance (given)	\$900	\$1,200	\$1,150
Add: Employer contributions	90	95	105
Less: Benefits paid	(150)	(155)	(160)
Add: Expected return on plan assets	90	108	92
Carrying value of the plan assets at year-end	930	1,248	1,187
Actuarial G/L	270 Gain	98 Loss	113 Gain
F.V of plan assets at year-end (given)	1,200	1,150	1,300

Step (8): Recording actuarial G/L on plan assets:

Description	Entry	2017		2018		2019	
		Dr	Cr	Dr	Cr	Dr	Cr
Recording actuarial gains on plan assets	Dr: Plan assets Cr: Actuarial gain on plan assets	\$270	\$270	-	-	\$113	\$113
Recording actuarial losses on plan assets	Dr: Actuarial loss on plan assets Cr: Plan assets			\$98	\$98	-	-

Step (9): Calculating actuarial G/L on DBO:

Description	2017	2018	2019
P.V of the beg DBO balance (given)	\$1,000	\$1,350	\$1,340
Add: Current and past service cost	125	130	138
Add: Interest on DBO	100	121.50	107.20
Less: Benefits paid during the year	(150)	(155)	(160)
Carrying value of the DBO at year-end	1,075	1,446.50	1,425.20
Actuarial G/L	275 Loss	106.50 Gain	24.80 Loss
P.V of DBO at year-end (given)	1,350	1,340	1,450

Step (10): Recording actuarial G/L on DBO

Description	Entry	2017		2018		2019	
		Dr	Cr	Dr	Cr	Dr	Cr
Recording actuarial gains on DBO	Dr: DBO Cr: Actuarial gain on DBO	-	-	\$106.50	\$106.50	-	-
Recording actuarial loss on DBO	Dr: Actuarial loss on DBO Cr: DBO	\$275	\$275	-	-	\$24.80	\$24.80

Step (11): Netting actuarial G/L on plan assets and DBO

Description	2017	2018	2019
Actuarial G/L on plan assets	\$270 Gain	\$98 Loss	\$113 Gain
Actuarial G/L on DBO	275 Loss	106.50 Gain	24.80 Loss
OCI-Re-measurement G/L	5 Loss	8.50 Gain	88.20 Gain

Net annual actuarial G/L is recognised on OCI for the year as a re-measurement G/L as follows:

Description	Entry	2017		2018		2019	
		Dr	Cr	Dr	Cr	Dr	Cr
Closing actuarial G/L on OCI	Dr: Actuarial gain	\$270		\$106.5		\$113	
	Dr: OCI-Re-measurement loss	\$5		50		-	
	Cr: Actuarial loss		\$275	-	\$98		\$24.80
	Cr: OCI-Re-measurement gain		-		\$8.50		\$88.20

Calculation of re-measurement G/L under one step:

Description	2017	2018	2019
Beg net liability position	\$100	\$150	\$190
Reduced by: Employer contributions to the plan	(90)	(95)	(105)
Reduced by: Expected return on plan assets	(90)	(108)	(92)
Increased by: Current and past service cost	125	130	138
Increased by: Interest on DBO	100	121.50	107.20
Carrying value of ending net liability position	145	198.50	238.20
Actuarial (gain) or loss	5	(8.50)	(88.20)
Ending net liability position	150	190	150

Note: Benefits paid has zero effect in net pension asset or liability position. So it is not included above.

**B. Presentation and disclosure:**

1. Year-end P.V balance of DBO is **offset** against F.V balance of plan assets. The net position is presented in the SFP as a non-current liability/asset.

Description	2017	2018	2019
F.V of plan assets at year-end	\$1,200	\$1,150	\$1,300
P.V of plan liabilities at year-end	1,350	1,340	1,450
Net Deficit-non-current liabilities	150 Deficit	190 Deficit	150 Deficit

2. The balance of **cumulative** actuarial G/L is presented within the equity section at year-end as follows:

Description	2017	2018	2019
Cumulative beginning actuarial loss	\$100 L	\$105 L	\$96.50 L
Net actuarial G/L recognised on OCI for the year (re-measurement G/L)	5 L	8.50 G	88.20G
Year-end cumulative re-measurement loss (equity)	105 Dr	96.50 Dr	8.30 Dr

Note: **Cumulative** actuarial re-measurement G/L is not reclassified to P/L, *although* it may be transferred within equity.

3. Reported amounts on P/L *and* OCI are as follows:

Description	2017	2018	2019
Operating expenses			
Net pension expense	\$135	\$143.50	\$153.20
<b>OCI</b>			
Re-measurement G/L	5 loss	8.50 G	88.20G
Total charge to CI	140	135	65

4. A separate reconciliation showing the movement between the opening *and* closing balances for the net pension liability or asset position should be disclosed as follows:

Description	2017	2018	2019
Opening net plan liability	\$(100)	\$(150)	\$(190)
Increased by: Pension expense <i>and</i> OCI	(140)	(135)	(65)
Reduced by: Employer contributions to the plan	90	95	105
Closing net plan liability	(150)	(190)	(150)

Note: Because **benefits paid** reduce both plan assets *and* DBO; it has \$nil effect on net plan assets.

**Illustrative example (3):** Ralph is an entity that operates a **defined benefit** retirement benefits plan into which it makes contributions.

On 31, March, 2017 the SFP of Ralph showed a net liability relating to retirement benefit obligations as follows:

Market value of plan assets      \$60,000

P.V of plan liabilities      (70,000)

(10,000)

The balance of cumulative actuarial loss at 31, March, 2017 was \$2,000.

Information relating to the plan for the next three years is as follows:

Description	For the year-ended 31, March		
	2018	2019	2020
Employer contributions to the plan	\$4,000	\$4,300	\$4,400
Benefits paid out to employees	3,500	3,600	3,600
P.V of plan liabilities at year-end	84,000	96,000	108,000
Interest on obligation	7,000	7,560	7,680
Market value of plan assets at year-end	62,000	64,000	66,000
Expected return on plan assets	3,000	3,200	3,500
Current service cost	6,000	6,400	6,500



Assume all transactions are assumed to occur at the year-end.

Required: Prepare appropriate extracts from the statement of P/L and OCI and the SFP to show the effects of the retirement benefits plan covering each of the three years ending on 31, March, 2018, 2019 and 2020 together with a reconciliation of the movement on the **defined benefit obligation** /asset for each year.

Answer:

#### A. Recognition:

Step (1): Recording contributions received by the plan from the employer:

Description	Entry	2018		2019		2020	
		Dr	Cr	Dr	Cr	Dr	Cr
Contributions received from employer	Dr: Plan assets Cr: Cash	\$4,000		\$4,300		\$4,400	
			\$4,000		\$4,300		\$4,400

Step (2): Recording benefits paid by the plan to the employees:

Description	Entry	2018		2019		2020	
		Dr	Cr	Dr	Cr	Dr	Cr
Benefits paid by the plan to employees	Dr: DBO Cr: Plan assets	\$3,500		\$3,600		\$3,600	
			\$3,500		\$3,600		\$3,600

Step (3): Calculating interest cost on DBO:

Interest cost is given as follows:

Description	2018	2019	2020
Interest cost on DBO (given)	\$7,000	\$7,560	\$7,680

Step (4): Calculating expected return on plan assets:

Expected return on plan assets is given as follows:

Description	2018	2019	2020
Expected return on plan assets (given)	\$3,000	\$3,200	\$3,500

Step (5): Calculating pension expense

Description	2018	2019	2020
Current service cost	\$6,000	\$6,400	\$6,500
Add: Interest cost on DBO (Step 3 above)	7,000	7,560	7,680
Less: Expected return on plan assets (Step 4 above)	(3,000)	(3,200)	(3,500)
Pension expense	10,000	10,760	10,680

Pension expense is an operating expense that is recognised in P/L and credited to DBO.

Step (6): Recording pension expense:

Description	Entry	2018		2019		2020	
		Dr	Cr	Dr	Cr	Dr	Cr
Recording recognised pension expense	Dr: Pension expense-P/L Cr: DBO	\$10,000		\$10,760		\$10,680	
			\$10,000		\$10,760		\$10,680

Step (7): Calculating actuarial loss on plan assets:

Description	2018	2019	2020
F.V of Beg plan assets balance (given)	\$60,000	\$62,000	\$64,000
Add: Employer contributions to the plan	4,000	4,300	4,400
Less: Benefits paid out	(3,500)	(3,600)	(3,600)
Add: Expected return on plan assets	3,000	3,200	3,500
Carrying value of the plan assets at year-end	63,500	65,900	68,300
Actuarial loss	1,500 L	1,900 L	2,300 L
F.V of plan assets at year-end (given)	62,000	64,000	66,000

Step (8): Recording actuarial loss on plan assets

Description	Entry	2018		2019		2020	
		Dr	Cr	Dr	Cr	Dr	Cr
Recording actuarial losses on plan assets	Dr: Actuarial loss on plan assets Cr: Plan assets	\$1,500	\$1,500	\$1,900	\$1,900	\$2,300	\$2,300

Step (9): Calculating actuarial loss on DBO:

Actuarial loss on DBO is determined as follows:

Description	2018	2019	2020
P.V of the Beg DBO balance (given)	\$70,000	\$84,000	\$96,000
Add: Current service cost	6,000	6,400	6,500
Add: Interest on DBO	7,000	7,560	7,680
Less: Benefits paid during the year	(3,500)	(3,600)	(3,600)
Carrying value of the DBO at year-end	79,500	94,360	106,580
Actuarial loss	4,500 L	1,640 L	1,420 L
P.V of DBO at year-end (given)	84,000	96,000	108,000

Step (10): Recording actuarial loss on DBO:

Description	Entry	2018		2019		2020	
		Dr	Cr	Dr	Cr	Dr	Cr
Recording actuarial loss on DBO	Dr: Actuarial loss on DBO Cr: DBO	\$4,500	\$4,500	\$1,640	\$1,640	\$1,420	\$1,420

Step (11): Total actuarial loss on plan assets and DBO:

Description	2018	2019	2020
Actuarial loss on plan assets	\$1,500	\$1,900	\$2,300
Actuarial loss on DBO	4,500	1,640	1,420
OCI-Re-measurement loss	6,000 L	3,540 L	3,720 L

Net annual actuarial loss is recognised on OCI for the year as a re-measurement loss as follows:

Description	Entry	2018		2019		2020	
		Dr	Cr	Dr	Cr	Dr	Cr
Closing actuarial G/L on OCI	Dr: OCI-Re-measurement loss Cr: Actuarial loss	\$6,000		\$3,540		\$3,720	
			\$6,000		\$3,540		\$3,720

Calculation of re-measurement G/L under one step

Description	2018	2019	2020
Beg net liability position	\$10,000	\$22,000	\$32,000
Reduced by: Employer contributions to the plan	(4,000)	(4,300)	(4,400)
Reduced by: Expected return on plan assets	(3,000)	(3,200)	(3,500)
Increased by: Current service cost	6,000	6,400	6,500
Increased by: Interest on DBO	7,000	7,560	7,680
Carrying value of ending net liability position	16,000	28,460	38,280
Actuarial loss	6,000 L	3,540 L	3,720 L
Ending net liability position	22,000	32,000	42,000

Note: Benefits paid has zero effect in net pension asset or liability position. So it is not included above.

## B. Presentation and disclosure:

1. Year-end P.V balance of DBO is **offset** against F.V balance of plan assets, the net position is presented in the SFP as a non-current liability/asset.

Description	2018	2019	2020
F.V of plan assets at year-end	\$62,000	\$64,000	\$66,000
P.V of plan liabilities at year-end	84,000	96,000	108,000
Net deficit-non-current liabilities	22,000 Deficit	32,000 Deficit	42,000 Deficit

2. The balance of cumulative actuarial loss is presented within the equity section at year- end as follows:

Description	2018	2019	2020
Cumulative beginning balance of actuarial loss	\$2,000 L	\$8,000 L	\$11,540 L
Net actuarial loss recognised on OCI for the year (re-measurement G/L)	6,000 L	3,540 L	3,720 L
Year-end cumulative re-measurement loss (equity)	8,000 Dr	11,540 Dr	15,260 Dr

Note: Cumulative actuarial re-measurement G/L is not reclassified to P/L, although it may be transferred within equity.

3. Reported amounts on P/L and OCI are as follows:

Description	2018	2019	2020
Operating expenses			
Net pension expense	\$10,000	\$10,760	\$10,680
<b>OCI</b>			
Re-measurement G/L	6,000 L	3,540 L	3,720 L
Total charge to CI	16,000	14,300	14,400

4. A separate reconciliation, showing the movement between the opening *and* closing balances for the net **pension liability** or **asset position** should be disclosed as follows:

Description	2018	2019	2020
Opening net <b>plan liability</b>	<b>\$10,000</b>	<b>\$22,000</b>	<b>\$32,000</b>
Increased by: <b>Pension expense</b> <i>and</i> OCI	<b>16,000</b>	<b>14,300</b>	<b>14,400</b>
Reduced by: Employer <b>contributions</b> to the <b>plan</b>	<b>(4,000)</b>	<b>(4,300)</b>	<b>(4,400)</b>
Closing net <b>plan liability</b>	<b>22,000</b>	<b>32,000</b>	<b>42,000</b>

Note: Because **benefits paid** reduce both **plan assets** *and* **DBO**; it has \$nil effect on net **plan assets**.



## 7/1. The 'asset ceiling test'

1. If a **defined benefit plan** is in **surplus** (rarely) IAS #19 states that; the **surplus** must be measured at the lower of:

A. The amount calculated as normal; *or*

B. The **total** of the **P.V** of any future refunds from the plan *or/and* reductions in future **contributions** to the **plan** that are possible because of the **surplus**.

This is known as applying the '**asset ceiling**' i.e. a **surplus** can only be recognised to the extent that; it will be **recoverable** in the form of refunds *or/and* reduced **contributions** in the future to ensure that; the **surplus** recognised in the F/S<sup>s</sup> meets the definition of an '**asset**' (a resource controlled by the entity that will lead to a probable inflow of economic benefits)

2. **Expected return on plan assets** would be calculated based on **asset ceiling**

3. The difference between actual **F.V** of **net assets** *and* the **asset ceiling** is included in **OCI-re-measurement component**.

**Illustrative example (1):** The following information relates to the **defined benefit plan** operated by Tosca for the year-ended 30, June, 2020:

Description	Amount
F.V of <b>plan assets</b> at 30, June, 2019	\$2,600m
<b>P.V</b> of <b>DBO</b> at 30, June, 2019	2,000
Current service cost for the year	100
<b>Benefits paid</b> in the year	80
<b>Contributions</b> into <b>plan</b>	90
F.V of <b>plan assets</b> at 30, June, 2020	3,100
<b>P.V</b> of <b>DBO</b> at 30, June, 2020	2,400

Discount rate for the **DBO** *and* **expected return on plan assets** is 10%

Tosca has identified that the **asset ceiling** at 30, June, 2019 *and* 30, June, 2020 based upon the **P.V** of future refunds from the plan *or/and* reductions in future **contributions** amounts to \$2,200m at 30, June, 2019 *and* \$2,600m at 30, June, 2020.

**Required:** Explain with supporting **calculations** the accounting treatment of the **pension scheme** for the year-ended 30, June, 2020.

Description	Entry	Amount	
		Dr	Cr
1. Contributions received from employer.	Dr: Plan assets Cr: Cash	\$90m	\$90m
2. Benefits paid by the plan to employees.	Dr: DBO Cr: Plan assets	\$80m	\$80m
3. Recording recognised pension expense (1)	Dr: Pension expense-P/L Cr: DBO	\$80m	\$80m
4. Recording actuarial gain on plan assets (2)	Dr: Plan assets Cr: Actuarial gain on plan assets	\$270m	\$270m
5. Recording actuarial loss on DBO (3)	Dr: Actuarial loss on DBO Cr: DBO	\$180m	\$180m
6. Closing actuarial G/L on OCI (4)	Dr: Actuarial gain Cr: Actuarial loss Cr: OCI-re-measurement gain	\$270m	\$180 \$90

Pension expense (1)	Amount
Current service cost	\$100m
Add: Interest cost on DBO ( $\$2,000 \times 10\%$ )	200m
Less: Expected return on plan assets adjusted for asset ceiling ( $\$2,200 \times 10\%$ )	(220)m
Pension expense	80m

Calculating actuarial gain on plan assets (2)	Amount
F.V of the Beg plan assets	\$2,600m
Add: Employer contributions to the plan	90m
Less: Benefits paid out	(80)m
Add: Expected return on plan assets	220m
Carrying value of the plan assets at year-end	2,830
Actuarial gain	270m G
F.V of plan assets at year-end	3,100m

Calculating actuarial loss on DBO (3)	Amount
P.V of the beg DBO balance (given)	\$2,000m
Add: Current service cost	100m
Add: Interest on DBO	200m
Less: Benefits paid during the year	(80)m
Carrying value of the DBO at year-end	2,220m
Actuarial loss	180m L
P.V of DBO at year-end (given)	2,400m

Net actuarial gain on plan assets and DBO (4)	Amount
Actuarial gain on plan assets	\$270m G
Actuarial loss on DBO	180m L
OCI-re-measurement gain	90m G

Calculation of re-measurement G/L under one step:

Description	Amount
Beg net asset position (\$2,600 - \$2,000)	\$600m
Add: Employer contributions to the plan	90m
Add: Expected return on plan assets	220m
Less: Current service cost	(100)m
Less: Interest on DBO	(200)m
Carrying value of ending net asset position	610
Add: Actuarial gain	90
Ending net asset position (\$3,100m - \$2,400m)	700m

Note: Benefits paid has zero effect on net pension asset or liability position; so it is not included above.

Excess of the asset ceiling during the year (5)	Amount
Ending net plan assets in excess of asset ceiling (\$3,100 - \$2,600)	\$500m
Beg net plan assets in excess of asset ceiling (\$2,600 - \$2,200)	400m
Excess of the asset ceiling during the year included in OCI-re-measurement gain	100m

The difference between the F.V of net assets and the asset ceiling is included in re-measurement component categorised as OCI. Thus; the \$400m that was recognised as re-measurement gain in OCI at 30, June, 2019 are increased by \$100m for the year-ended 30, June, 2020.

## B. Presentation and disclosure:

1. Year-end P.V balance of DBO is offset against F.V balance of plan assets, the net position is presented in the SFP as a non-current liability/asset.

Description	Amount
F.V of plan assets at the year-end	\$3,100
P.V of Plan liabilities at year-end	2,400
Net asset position-non-current assets	700m Surplus

2. The balance of cumulative actuarial G/L is presented within the equity section at year-end as follows:

Description	Amount
Cumulative beginning actuarial G/L	???
Net actuarial gain recognised on OCI for the year (re-measurement G/L)	90 Gain
Year-end cumulative re-measurement G/L (equity)	???

\* Included in the beginning balance of AOCI-cumulative actuarial G/L \$400 that represents excess of the asset ceiling of the beginning balance (\$2,600 - \$2,200).

♦ Cumulative actuarial re-measurement G/L is not reclassified to P/L although it may be transferred within equity.

3. Reported amounts on P/L and OCI are as follows:

Description	Amount
Operating expenses	
Net pension expense	(\$80m)
<b>OCI</b>	
Re-measurement gain	90m
Net effect on CI	10m

4. A separate reconciliation, showing the movement between the opening and closing balances for the net pension liability or asset position should be disclosed as follows:

Description	Amount
Opening net plan assets (\$2,600m - \$2,000m)	\$600m
Plus: Employer contributions to the plan	90m
Plus: Net positive effect on CI	10m
Closing net plan asset (\$3,100 - \$2,400)	700m

Note: Because benefits paid reduce both plan assets and DBO; it has \$nil effect on net plan assets.

**Illustrative example (2):** IAS #19 'Employee benefits' is applied to all employee benefits other than those to which IFRS Accounting Standard # 2 Share-based payment applies. Accounting for short-term employee benefits is relatively straightforward. However accounting for post-employment benefits can be rather more complex. This particularly applies where post-employment benefits are provided via defined benefit plans.

**Required:** Explain the amounts that should be included in the F/S<sup>5</sup> of employers regarding post-employment benefits provided via defined benefit plans (ignore the effect of re-measurements).

**Answer:** An employer's SFP should show the net liability or asset position relating to the defined benefit plans. Since the plan will make the future payments (to the employees) from its own funds; the employer recognises a liability (or an asset) to the extent to which it will have to pay more into the plan fund for the plan to be able to make those payments. Net asset or liability position is the difference between the F.V of the plan's assets and the P.V of the plan liability to the employees. This liability (or asset) would then be adjusted for any re-measurements by the actuary as well as for any future payments to be made that relate to past service costs that have not been recognised yet i.e. Employment in prior periods. If there is an asset in relation to the plan this should then be measured as the lower of the figure just calculated and the total of the P.V of any economic benefits available in the form of refunds from the plan or/and reductions in future contributions to the plan that are possible because of the surplus.

The statement of P/L would recognise for the year expenses for:

A. The current service cost;

B. Past service costs;

C. The effect of any curtailments or settlements;

D. Net interest on the net defined benefit asset or obligation;

But gains or losses on re-measurement of the net asset or liability would be recognised within OCI. It is never reclassified to P/L although it may be transferred within equity.



# التغيير من خطة المعاشات التقاعدية المحددة المزايا إلى خطة المساهمة المحددة

## 8/1. Change from **defined benefit pension plan**

### to **defined contribution plan**

G/L resulting from a change from a **defined benefit pension plan** to a **defined contribution plan** is immediately recognised in P/L through an increase *or* decrease in **pension expense** with a corresponding adjustment to **plan assets and pension liability**.

**Illustrative example (1):** On 31, Dec, 2019 Wella changed its **defined benefit pension plan** to a **defined contribution plan**. Wella agrees with the employees to pay them \$9m in total on the introduction of a **defined benefit plan**. The employees forfeit any **pension entitlement** for the previous **defined benefit plan**. The **pension liability** balance recognised in the SFP on the date of **settlement** was \$10m.

Required: How should this **curtailment accounted for** in the SFP at 31, Dec, 2019?

Answer: A **settlement gain** of \$1m should be **recognised** as follows:

Dr: **DBO** \$10m

Cr: **Plan assets** \$9m

Cr: **Pension expense-settlement gain** \$1m

**Illustrative example (2):** Torintino operates a **defined benefit pension plan** and changes it on Jan, 1, 2020 to a **defined contribution plan**. The **defined benefit plan** still relates to **past service** but not to future service. The net **pension liability** after the **plan amendment** is \$50m and the net **pension liability** before the **amendment** was \$90m. How should Torintino account for this change?

- A. Recognises a **gain** of \$40m by reducing **pension expense and pension liability**.
- B. Does not recognise a **gain**.
- C. Recognises a **gain** of \$40m over the remaining service lives of the employees.
- D. Recognises the **gain** in OCI.

Answer (A) is correct.

## 9/1. **Defined benefit plan amendments**

1. **Plan amendment** may increase *or* decrease employee benefits. The increase *or* decrease in the **P.V** of the **DBO** as a result of the **plan amendment** is added to *or* subtracted from **pension expense** in the period of amendment.

2. **Past service cost** is the **increase** in the **P.V** of **DBO** resulting from **plan amendments** that enhances employee benefits on services rendered in prior periods. The additional benefits related to **past service cost** are **immediately recognised** in P/L as a component of **pension expense** *regardless of whether* these benefits are vested *or* not.

**Illustrative example:** Andrea operates a pension plan that provides a pension of 2% of final salary for each year of service. On 1, Jan, 2019 Andrea improves the pension benefits to 2.50% of final salary for each year of service including service before this date. Employees must have worked for Andrea for at least five years in order to obtain this increased benefit. At the date of the improvement; the **P.V** of the additional benefits for the **past service** from 1, Jan, 2015 to 1, Jan, 2019 is as follows:

<b>Additional benefits related to:</b>	<b>Amount</b>
Employees with more than five years' service at 1, Jan, 2019	\$150,000
Employees with less than five years' service at 1, Jan, 2019 (average length of service: two years)	120,000
<b>Total additional benefits related to employees</b>	<b>270,000</b>

**Required:** Explain how the additional benefits are **accounted for** in Andrea's F/S<sup>5</sup>.

**Answer:** Andrea should **recognise** all \$270,000 **immediately** as an increase in **DBO** following the **amendment** to the plan on 1, Jan, 2019. The \$270,000 will be fully **recognised** as a **pension expense-past service cost**. *Whether or not* the benefits have vested by the reporting date is not relevant to their recognition as an expense in P/L.

**Dr: Pension expense-past service cost** \$270,000

**Cr: DBO** \$270,000

3. **Plan curtailment** is a significant reduction in the *number of employees* covered by a **pension plan**. This may be a consequence of an individual event *such as* plant closure *or* discontinuance of an operation *or* activity within the entity which will typically result in employees being made redundant.

♦Any **G/L** resulting from **plan curtailment** is fully **recognised** as an increase *or* decrease in **pension expense** that corresponds to any decrease *or* increase in **DBO**.

4. Under **plan curtailment without settlement** the redundant employees will remain in the scheme *but* will earn **no** further **pension benefits** after being made redundant. *Accordingly*; the **DBO** will **not** increase as they will not render future services to the entity. On the other hand; the redundant employees will be paid a **pension** *when* they reach retirement age.

**G/L** on **plan curtailment without settlement** is recognised in P/L as increase *or* decrease in **pension expense** and a corresponding decrease *or* increase in **DBO**.

**Illustrative example:** Lockheed decides to close a business segment. The segment's employees will be made redundant *and* will earn **no** further **pension benefits** after being made redundant. Their **plan assets** will remain in the scheme so that; the employees will be paid a **pension** *when* they reach retirement age (**plan curtailment without settlement**). Before the **curtailment** the **scheme assets** had a **F.V** of \$5m *and* the **DBO** had a **P.V** of \$6m. It is estimated that; the **curtailment** will reduce the **P.V** of the future **obligation** by 10% because the employees will not benefit from future salary increases *and therefore* will be entitled to a smaller **pension** than previously estimated.

**Required:** What is the net **G/L** on **curtailment** and how will this be treated in Lockheed F/S?

**Answer:** The **P.V** of **DBO** is reduced by  $\$6m \times 10\% = \$0.60m$  with no change in the **F.V** of the assets as they remain in the plan. The reduction in the **DBO** represents a **gain on curtailment** which should be **recognised immediately** as reduction in **pension expense** in P/L for the year.

Dr: **DBO** \$0.60m

Cr: **Pension expense** \$0.60m

The net position of the plan before and after the curtailment will be as follows:

Description	Before	After
<b>P.V of DBO</b>	<b>\$6m</b>	<b>\$5.40m</b>
<b>F.V of plan assets</b>	<b>5m</b>	<b>5m</b>
<b>Net liability position</b>	<b>1m</b>	<b>0.40m</b>

**5. Plan curtailment with settlement** occurs when the entity enters into a transaction to eliminate legal or constructive obligation for part or all of the benefits provided under the plan. For example an employee may leave the entity for a new job elsewhere and a payment is made from that pension plan to the pension plan operated by the new employer. The **G/L on curtailment with settlement** comprises the difference between the **F.V** of the plan assets paid out and the reduction in the **P.V** of **DBO**. This **G/L** is recognised in P/L as a component of **pension expense** on the date when the entity eliminates the obligation for all or part of the benefits settled.

**6.** All changes in plan amendments are recognised at the earlier of: 'when the plan amendment or curtailment occurs or when the entity recognises related restructuring costs or termination benefits'.

**Illustrative example:** The following data applies to the post employment defined benefit plan of Alberto.

- Discount rate: 10% (each year)

- **P.V** of **DBO** at start of 2017: **\$1m**.

- Market value of plan assets at start of 2017: **\$1m**.

The following figures are relevant:

Description	2017	2018	2019
<b>Current service cost</b>	<b>\$140m</b>	<b>\$150m</b>	<b>\$150m</b>
<b>Benefits paid out</b>	<b>120</b>	<b>140</b>	<b>150</b>
<b>Contributions paid by Alberto</b>	<b>110</b>	<b>120</b>	<b>120</b>
<b>P.V of DBO at year-end</b>	<b>1,200</b>	<b>1,650</b>	<b>1,700</b>
<b>F.V of plan assets at year-end</b>	<b>1,250</b>	<b>1,450</b>	<b>1,610</b>

**Additional information:**

**A.** At the end of 2018 a division of Alberto was sold. As a result a large number of the employees of that division opted to transfer their accumulated pension entitlement to their new employer's plan. Assets with **F.V** of \$48m were transferred to the other entity's plan and the actuary has calculated the reduction in Alberto's **DBO** at \$50m. The year-end valuations in the table above were carried out before this transfer was recorded.

**B.** At the end of 2019 a decision was taken to make a one-off additional payment to former employees currently receiving pensions from the plan. This was announced to the former employees before the year-end. This payment was not allowed for in the original terms of the plan. The actuarial valuation of the obligation in the table above includes the additional liability of \$40m relating to this additional payment.



C. Cumulative beginning actuarial **G/L** is \$nil

Required: Show how Alberto should account for this **defined benefit plan** in years from 2017 through 2019.

Answer:

### A. Recognition:

Step (1): Recording **contributions received** by the plan from the employer:

Description	Entry	2017		2018		2019	
		Dr	Cr	Dr	Cr	Dr	Cr
<b>Contributions received</b> from employer	Dr: Plan assets Cr: Cash	\$110		\$120		\$120	
			\$110		\$120		\$120

Step (2): Recording **benefits paid** by the plan to the employees:

Description	Entry	2017		2018		2019	
		Dr	Cr	Dr	Cr	Dr	Cr
<b>Benefits paid</b> by the plan to employees	Dr: DBO Cr: Plan assets	\$120		\$140		\$150	
			\$120		\$140		\$150

Step (3): Recording **partial settlement** at the end of 2018:

**Plan curtailment** at the end of 2018 would *result in* reduction in **DBO** at \$50m *and* reduction in **plan assets** at \$48m, the difference is **settlement gain** that reduces **pension expense** as follows:

Description	Entry	2017		2018		2019	
		Dr	Cr	Dr	Cr	Dr	Cr
<b>Recording Plan curtailment with settlement</b>	Dr: DBO Cr: Plan assets Cr: Pension expense			\$50	\$48		\$2

Step (4): Calculating **interest cost** on **DBO**:

1. **Interest cost** = beginning **P.V** balance of the **DBO** × interest rate at the **start** of the year.

Description	2017	2018	2019
<b>Beg balance of DBO</b>	<b>\$1,000</b>	<b>\$1,200</b>	\$1,650 - \$50 = <b>1,600*</b>
(×) Beg interest rate	10%	10%	10%
<b>Interest cost on DBO</b>	<b>100</b>	<b>120</b>	<b>160</b>

2. **Interest cost** on beginning balance of **DBO** is a component of periodic **pension expense** that increases carrying value of **DBO**.

\*Beginning balance of **DBO** on 1, Jan, 2019 is calculated after the **curtailment** effect.

Step (5): Calculating **expected return** on **plan assets**:

1. **Expected return on plan assets** = (beginning **F.V** balance of **plan assets** × expected rate of return at the **start** of the year) - expected administrative **costs** of the plan.



Description	2017	2018	2019
Beg balance of plan assets	\$1,000	\$1,250	\$1,450 - \$48 = \$1,402*
(×) Beg expected rate of return	10%	10%	10%
Expected return on plan assets	100	125	140.20

2. Expected return on plan assets on beginning F.V of plan assets increases carrying value of plan assets and reduces periodic pension expense.

\* Beginning balance of plan assets on 1, Jan, 2019 is calculated after the curtailment effect.

Step (6): Calculating pension expense:

1. The components of pension expense are as follows:

Description	2017	2018	2019
Current service cost	\$140	\$150	\$150
Past service cost	0	0	40
Add: Interest cost on DBO (step 3 above)	100	120	160
Less: Expected return on plan assets (step 4 above)	(100)	(125)	(140.20)
Pension expense	140	145	209.80

2. Pension expense is an operating expense that is recognised in P/L and credited to DBO.

3. The one-off additional payment to former employees currently receiving pensions from the plan occurred in 2019 will increase pension expense and DBO.

4. The gain on plan settlement at the end of 2018 is already recorded by a reduction of pension expense; accordingly it will not be reduced again in the table above.

Step (7): Recording pension expense:

Description	Entry	2017		2018		2019	
		Dr	Cr	Dr	Cr	Dr	Cr
Recording recognised pension expense	Dr: Pension expense-P/L Cr: DBO	\$140		\$145		\$209.80	
			\$140		\$145		\$209.80

Step (8): Calculating actuarial gain on plan assets:

Actuarial G/L on plan assets is determined as follows:

Description	2017	2018	2019
F.V of the Beg plan assets balance (given)	\$1,000	\$1,250	\$1,402
Add: Employer contributions to the plan	110	120	120
Less: Benefits paid out	(120)	(140)	(150)
Add: Expected return on plan assets	100	125	140.20
Plan curtailment	0	(48)	0
Carrying value of the plan assets at year-end	1,090	1,307	1,512.20
Actuarial gain	160 G	95 G	49.80 G
F.V of plan assets at year-end (given)	1,250	1,450 - 48 = 1,402	1,610 - 48 = 1,562

Note: F.V of plan assets at the end of 2018 and 2019 would be reduced by \$48 plan curtailment because the F.V of plan assets given at the end of 2018 and 2019 were determined before recording the transfer of \$48.

Step (9): Recording actuarial gain on plan assets:

**Step (10): Calculating actuarial G/L on DBO:**

Actuarial G/L on DBO is determined as follows:

Description	2017	2018	2019
P.V of the Beg DBO balance (given)	\$1,000	\$1,200	\$1,600
Add: Current service cost	140	150	150
Past service cost	0	0	40
Plan curtailment	-	(50)	-
Add: Interest on DBO	100	120	160
Less: Benefits paid during the year	(120)	(140)	(150)
Carrying value of the DBO at year-end	1,120	1,280	1,800
Actuarial G/L	80 L	320 L	150 G
P.V of DBO at year-end (given)	1,200	1,650 - 50 = 1,600	1,700 - 50 = 1,650

Note: P.V of DBO at the end of 2018 and 2019 would be reduced by \$50 plan curtailment because the P.V of DBO given at the end of 2018 and 2019 were determined before reducing DBO by \$50.

**Step (11): Recording actuarial G/L on DBO:**

Description	Entry	2017		2018		2019	
		Dr	Cr	Dr	Cr	Dr	Cr
Recording actuarial gains on DBO	Dr: DBO Cr: Actuarial gain on DBO					\$150	\$150
Recording actuarial loss on DBO	Dr: Actuarial loss on DBO Cr: DBO	\$80	\$80	\$320	\$320		

**Step (12): Netting actuarial G/L on plan assets and DBO:**

Description	2017	2018	2019
Actuarial gain on plan assets	160 G	95 G	49.80 G
Actuarial G/L on DBO	80 L	320 L	150 G
OCI-re-measurement G/L	80 G	225 L	199.80 G

Net annual actuarial G/L is recognised on OCI for the year as a re-measurement G/L as follows:

Description	Entry	2017		2018		2019	
		Dr	Cr	Dr	Cr	Dr	Cr
Closing actuarial G/L on OCI	Dr: Actuarial gain	\$160		\$95		\$199.80	
	Dr: OCI-re-measurement loss	-	\$80	\$225	\$320	-	-
	Cr: Actuarial loss		\$80		-		\$199.80
	Cr: OCI-re-measurement gain						

Description	2017	2018	2019
Beg net (asset) liability position	\$nil	(\$50)	\$198
Employer contributions to the plan	(110)	(120)	(120)
Expected return on plan assets	(100)	(125)	(140.20)
Current service cost	140	150	150
Past service cost	0	0	40
Interest on DBO	100	120	160
Reduction on Plan assets-curtailment	0	48	0
Reduction on Plan liabilities-curtailment	0	(50)	0
Carrying value of ending net (asset) liability position	30	(27)	287.80
Actuarial (gain) or loss	(80) G	225 L	(199.80) G
Ending net liability (asset) position	(50)	198	88

Note: benefits paid has zero effect in net pension asset or liability position; so it is not included above.

#### B. Presentation and disclosure:

1. Year-end P.V balance of DBO is **offset** against F.V balance of plan assets. The net position is presented in the SFP as a non-current liability/asset.

Description	2017	2018	2019
F.V of plan assets at the year-end	\$1,250	\$1,402	\$1,562
P.V of plan liabilities at year-end	1,200	1,600	1,650
Non-current assets/liabilities	50 Surplus	198 Deficit	88 Deficit

2. The balance of cumulative actuarial G/L is presented within the equity section at year-end as follows:

Description	2017	2018	2019
Cumulative beginning actuarial G/L	\$nil	\$80 G	\$145 L
Net actuarial G/L recognised on OCI for the year	80 G	225 L	199.80 G
Year-end cumulative re-measurement loss (equity)	80 Cr	145 Dr	54.80 Cr

Note: Cumulative actuarial re-measurement G/L is not reclassified to P/L, although it may be transferred within equity.

3. Reported amounts on P/L and OCI are as follows:

Description	2017	2018	2019
Operating expenses			
Net pension expense	\$140	\$145 - \$2 = \$143	\$209.80
<b>OCI</b>			
Re-measurement G/L	80 Gain	225 Loss	199.80 Gain
Charge to CI	60	368	10

4. A separate reconciliation, showing the movement between the opening and closing balances for the net pension liability or asset position should be disclosed as follows:

Description	2017	2018	2019
Opening net plan asset /(liability)	\$nil	\$50	\$(198)
Pension expense and OCI	(60)	(368)	(10)
Employer contributions to the plan	110	120	120
Closing net plan assets/(liability)	50	(198)	(88)

Note: Because benefits paid reduce both plan assets and DBO; it has \$nil effect on net plan assets.

## 10/1. Effects of pension plans on consolidated F/S<sup>3</sup>

For convenience, the adjusting effects of the pension plans on the consolidated F/S<sup>3</sup> will be discussed in this chapter.

The following notes are relevant to the adjusting effects of pension plans on consolidated F/S<sup>3</sup>:

1. At the acquisition date, Pension plan assets and liabilities that associated with acquiree's employee (Sub) are measured and recognised in consolidated F/S<sup>3</sup> in accordance with IAS #19 'Employee Benefits' rather than F.V (Exception to IFRS Accounting Standard # 3).

2. Any amendments to pension plans (and their related income tax effects) that are made as a result of business combination are treated as a post-combination event and recognised in the consolidated F/S<sup>3</sup> in the periods in which the changes occur in accordance with IAS #19 provisions.

3. For defined contribution plans;

A. Contributions paid by the employer (Parent or Sub) should be charged to the payer's expenses (pension expense) any unpaid amounts should be accrued at year-end and the benefits paid to the retired employees would reduce plan assets and liabilities with zero effect on net plan asset position or liability position.

B. No re-measurement G/L is recognised.

**Illustrative example:** Odessa (parent) set up a defined contribution pension scheme on 1, Oct, 2018. Odessa must make annual contributions into the scheme equivalent to 5% of employee salaries for that 12 month period. For the year-ended 30, Sep, 2019; employee salaries were \$20m. Odessa has paid \$0.30m into the pension scheme in the current year and recognised this as an administrative expense.

**Required:** Show the effects on consolidated SFP on 30, Sep, 2019.

**Answer:**

Pension expense = \$20m × 5% = \$1m.

Amount accrued at year-end = \$1m - amount paid during the year \$0.30m = \$0.70m.

Description	Consolidated statement of P/L	Consolidated SFP
Recording occurred	Dr: Adm. Exp-Parent \$0.70m	Dr: R.E <sup>3</sup> \$0.70m
Exp.	Cr: Pension liability \$0.70m	Cr: Pension liability \$0.70m

4. For defined benefit plan;

A. Contributions paid increases net asset position or reduce net liability position. If benefits paid were incorrectly expensed; an adjusting entry is required to reduce expense.

B. Pension expense must be calculated and recognised in the consolidated F/S<sup>3</sup> if it was not recorded during the year.

C. Benefits paid to the retired employees would reduce plan assets and DBO with zero effect on net plan asset or liability position.

D. Re-measurement G/L must be computed and recognised in consolidated F/S<sup>3</sup>.

**Illustrative example (1):** The group makes contributions into both defined benefit and defined contribution plans.

All the employees of Kara (75% owned Sub) and Gomera (80% owned Sub) are members of defined contribution plans but many of the employees of Penny (parent) are members of a defined benefit plan. The following are relevant details regarding the defined benefit plan:

A. P.V of plan obligation at 30, Sep, 2019: \$40m (30, Sep, 2018: \$32m).

B. F.V of plan assets at 30, Sep, 2019: \$34m (30, Sep, 2018: \$27m).

C. Current service cost for the year-ended 30, Sep, 2019: \$6m.

D. Contributions paid into the plan by Penny in the year-ended 30, Sep, 2019: \$5.40m.

E. Benefits paid to retired members of Penny: \$2m.

F. Relevant market yield: 5% per annum throughout the period.



Penny has charged the **contributions** paid into the **defined benefit plan** in the year-ended 30, Sep, 2019 as an **administrative expense**.

Penny has made no other entries in respect of the plan in the statement of P/L and OCI. However Penny correctly **accounted** for the **defined benefit plan** in the F/S<sup>3</sup> for the year-ended 30, Sep, 2018.

**Required:** Show the effects on consolidated SFP on 30, Sep, 2019.

**Answer:**

**1. Relating to Kara and Gomera pension plans:**

No adjusting entries will be made in consolidated F/S<sup>3</sup> to the Sub<sup>13</sup> **pension plans** because no information was given relating to their **defined contribution plans**.

**2. Contributions paid to the plan increases plan assets rather than pension expenses:**

Description	Consolidated statement of P/L and OCI	Consolidated SFP
Excluding contributions incorrectly charged to P/L	Dr: Plan assets \$5.40m Cr: Adm. Exp-Parent \$5.40m	Dr: Plan assets \$5.40m Cr: R.E <sup>3</sup> \$5.40m

**3. Calculating pension expense for the current year:**

Pension expense	Amount
Current service cost (given)	\$6m
Add: Interest cost on beginning pension liability (\$32m × 5% )	1.60m
Less: Expected return on beginning balance of plan assets (\$27m × 5% )	(1.35)m
Pension expense	6.25m

Description	Consolidated statement of P/L and OCI	Consolidated SFP
Recording pension expense for the year	Dr: Pension Exp-Parent \$6.25m Cr: Pension liability \$6.25m	Dr: R.E <sup>3</sup> \$6.25m Cr: Pension liability \$6.25m

**4. Recording Benefits paid:**

Description	Consolidated statement of P/L and OCI	Consolidated SFP
Recording benefits paid to employees	No effect	Dr: Pension liability \$2m Cr: Plan assets \$2m

**5. Calculating Re-measurement G/L:**

Description	Amount
Opening net liability position (\$32m - \$27m)	\$5m
Increased by: Current service cost (given)	6m
Increased by: Interest cost on pension liability (\$32m × 5% )	1.60m
Reduced by: Expected return on plan assets (\$27m × 5% )	(1.35)m
Reduced by: Contributions paid to the plan (given)	(5.40)m
Benefits paid	Nil effect
Carrying value of net liability position at year-end	5.85m
Actuarial loss	0.15m
Closing net liability position (\$40m - \$34m)	6m

**Note:** benefits paid to employees will not affect the net liability position because it decreases plan assets and DBO accordingly; its net effect on net pension position would be \$nil in all cases.

Note: **benefits paid** to employees will not affect the net **liability** position because it decreases **plan assets** and **DBO** accordingly; its net effect on net **pension position** would be **Snul** in all cases.

Description	Consolidated statement of P/L and OCI	Consolidated SFP
<b>Recording</b>	Dr: OCI-Re-measurement loss -Parent \$0.15m	Dr: Other component of equity- Parent \$0.15m
<b>actuarial loss</b>	Cr: Pension <b>liability</b> \$0.15m	Cr: Pension <b>liability</b> \$0.15m

**Illustrative example (2):** Morgan (parent) has established a **defined benefit retirement plan** for its employees. Its SFP at 31, March, 2019 showed a net **liability** of \$60m in respect of this plan comprising of the following:

- **P.V** of Pension **obligation** **\$140m**.

- **F.V** of plan assets **\$80m**.

Relevant data for year-ended 31, March, 2020 is as follows:

- Current service cost **\$28m**.

- **Interest cost** on net Plan **liabilities** **\$2m**.

- **Contributions** paid into the plan by Morgan **\$25m**.

- **Benefits paid** by the plan to plan members **\$9m**.

- **Actuarial loss** on net Plan **liabilities** **\$1m**.

The only accounting entry made by Morgan in respect of the plan in its draft F/S<sup>1</sup> of the current period was to debit the net **pension liability** with the **contributions** paid into the plan.

Ignore the deferred tax implications of any adjustments you make *due* to the information in this note.

Required: Show the effects on consolidated SFP on 31, March, 2020.

Answer:

1. Calculating **pension expense** for the current year:

Pension expense	Amount
Current service cost (given)	\$28m
Net <b>interest cost</b> (given)	<b>2m</b>
Pension expense	<b>30m</b>

Description	Consolidated statement of P/L and OCI	Consolidated SFP
<b>Recording pension expense for the year</b>	Dr: Operating expenses (pension <b>Exp</b> )-Parent \$30m Cr: Pension <b>liability</b> \$30m	Dr: R.E <sup>1</sup> \$30m Cr: Pension <b>liability</b> \$30m

2. Recording **benefits paid**:

Description	Consolidated statement of P/L and OCI	Consolidated SFP
<b>Recording benefits paid to employees</b>	No effect	Zero effect on net pension position

3. Recording re-measurement (actuarial) loss:

Description	Consolidated statement of P/L and OCI	Consolidated SFP
<b>Recording actuarial loss</b>	Dr: OCI-re-measurement loss-Parent \$1m Cr: <b>DBO</b> \$1m	Dr: Other component of equity-Parent \$1m Cr: <b>DBO</b> \$1m

4. Calculating ending balance of net liability position:

Movement in net liability position	Amount	Notes
Opening net liability position (given)	\$60m	
Increased by: Current service cost (given)	28m	Adjusted above
Increased by: Interest cost on net liability position (given)	2m	Adjusted above
Reduced by: Contributions paid to the plan (given)	(25)m	Recorded per question
Benefits paid	Nil effect	
Increased by: Actuarial loss on net liability position (given)	1m	Adjusted above
Closing net liability position	66m	

Notes:

A. Benefits paid to employees will not affect the net liability position because it decreases plan assets and DBO accordingly its net effect on net pension position would be \$nil.

B. No other adjustments are required in consolidated F/S<sup>5</sup>.

C. Morgan's SFP at 31, March, 2020 would include non-current net pension liability at \$66m.

**11/1. Disclosures**

An entity should **disclose** the following information about **defined benefit plan**:

1. Explanation of the **regulatory framework** within which the plan operates;
2. Explanation of the nature of **benefits** provided by the plan;
3. Explanation of the **nature of the risks** the entity is exposed to;
4. Explanation of any **plan amendments, settlements or curtailments** in the year;
5. Disclosure of the significant **actuarial** assumptions used to determine the net **DBO or assets**;
6. A reconciliation showing the movements during the period in the **net liability (or asset) recognised** the SFP;
7. The charge to total **CI** for the year, separated into the appropriate components;
8. Analysis of the **re-measurement** component;
9. Sensitivity analysis *and* narrative description of how the **defined benefit plan** may affect the nature, timing *and* uncertainty of the entity's future cash flows.

**12/1. Items under other long term benefits 'category'**

The types of benefits that might fall into this category include:

- A. Long-term paid absences *such as* long-service *or* sabbatical leave;
- B. Jubilee *or* other long-service benefits;
- C. Long-term disability benefits;
- D. Long-term profit-sharing *and* bonuses;
- E. Deferred remuneration.



# المحاسبة عن المزايا الأخرى طويلة الأجل (بخلاف خطط المزايا بعد انتهاء الخدمة)

## 12/2. Accounting treatment for other long-term benefits

1. There are many similarities between these types of benefits *and* **defined benefit pension plans**. For example in a long-term bonus plan; the employees may provide service over a number of periods to earn their entitlement to a payment at a later date.
2. In some case; the entity may put cash aside *or* invest it in some way *such as* taking out an insurance policy to meet the liabilities *when* they arise.
3. Because the uncertainty relating to the measurement of these benefits is low compared with **defined benefit plans**; IAS # 19 requires **accounting for other long term benefits through P/L**.
4. The entity should **recognise** all of the following in P/L:
  - A. **Service cost**;
  - B. Net interest on the **defined benefit liability/asset**;
  - C. Re-measurement of the **defined benefit liability/asset** is **recognised in P/L rather than OCI**.

## 13/1. Criticisms of IAS #19

Retirement benefits accounting continues to be a controversial area. Commentators have perceived the following problems with the IAS #19 approach:

1. IAS #19 requires **plan assets** to be valued at F.V. The F.V of **plan assets** is not relevant to the economic reality because most **pension assets** are held for the long term. *And if* the **actuarial** bases of valuing **plan assets** reflect the long-term perspective such a move would be a departure from IFRS **Accounting Standard #13 'F.V Measurement'**
2. The F.V of **plan assets** may be volatile *or* difficult to measure reliably; this could lead to significant fluctuations in the SFP.
3. The treatment of **pension costs** in the statement of P/L *and* OCI is complex *and* may not be easily understood by F/S<sup>s</sup> users.